# THE PREHISTORIC OCCUPATION OF THE HALE FARM BATH TOWNSHIP SUMMIT COUNTY OHIO

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## Abstract

A prehistoric occupation at the Hale Farm site (33Su17) underlay the 1809–27 occupation of a broad tributary floodplain of the Cuyahoga River. During the historical archaeology, four aboriginal pits/hearths and possible houses represented by two single post arcs of 5 m diameter were encountered in 36 $m^2$ excavated over a 150 $m^2$ area. These features, and the undisturbed strata in places, yielded a wide range of lithic tools and debitage with over 60 projectile points, intermediate between the styles of the ninth and fourteenth centuries A.D.. At least 11 handmade ceramic vessels were represented by over 500 grit-tempered, cord-marked and smooth sherds. These simple ceramic jars had rims with interior cordmarking, and flat lips which were either plain or notched. The ceramics are ancestral to the earliest Whittlesey ceramic types of the thirteenth century. Faunal and floral analyses indicate a late summer campsite with some evidence for maize and squash agriculture.

## Introduction

In 1971 and again in 1980, archaeological investigations were undertaken at the Western Reserve Historical Society's Jonathan Hale Farm and Village in Bath Township, Summit County, Ohio.

The 1971 archaeological excavations, between June 9 and August 14, were supported by a grant from the National Endowment for the Humanities under my direction (H-4982). Work in the field was supervised by David Frayer and George Miller. Full-time crew members included Bert Barnard, Bruce Palmer, and Larry Rubenstein. Part-time crew included Al Hugley, Meg Conley, Elizabeth Coppedge and Harvey Yates (see Plate I).

The limited 1980 excavation was performed by Donna L. Benson as part of her Ph.D. research. As Benson's dissertation committee chairman, this work, too, was done under my overall direction.

Pl. I. 1971 excavations of the Hale Farm site view to east from 1827 house to Oak Hill Road.

The focus of these archaeological investigations was the historic occupation of the early nineteenth century. It was my aim to study the structural and material differences between the Connecticut Land Company "settlers" and the non-landowning "squatters" whom the settlers frequently encountered occupying the best homesite in their often vast properties. We also hoped to learn something about the rates of the economic effects and the material consequences due to opening the Ohio-Erie Canal through the Western Reserve in the 1820s. The Hale Farm had been occupied for several years by Abraham Miller when Jonathan Hale arrived from Connecticut in 1810. Hale continued to live in Miller's cabin until 1826/1827. With the opening of the canal, Hale prospered. After solidifying his economic position, he built and occupied the large brick house now on the property, but continued using the cabin as an outbuilding until after 1840. Excavation of the original cabin and analyses of the artifacts it contained seemed to offer an ideal opportunity to begin the study.

The expectation concerning what archaeology could add to the history of the early Western Reserve era largely met with success. Although the final report of the 1971/1980 excavations has not yet been published, several articles have detailed various aspects of that archaeological excavation (Benson 1978, 1980; Brose 1973a; Brose and Benson, 1985; Brose et al. 1981; Miller 1980, 1983).

An unexpected result of the investigation was the discovery that not even Abraham Miller had been the first inhabitant. In 26 units which were excavated, we encountered the remains of a prehistoric Indian campsite which had been abandoned and buried nearly 500 years before Columbus had set sail. To a degree, Miller and Hale, in their continual historic occupations of the area, had removed or disturbed much of this archaeological site which lay beneath their feet. Those storage pits, brick kilns, roads, cellars, and foundations which we had been expecting to find had often been dug through the thin prehistoric stratum.

Of course, our digging for historical information was carried deeply to recover all of the prehistoric remains in any area where we worked. Yet our excavations were limited; indeed, we dug into about 20% of the area over which prehistoric remains were found. Nonetheless, enough of the aboriginal camp remained relatively undisturbed that

it was possible to carefully reconstruct many aspects of the economy, the technology, and the social lifestyles of these ancient Americans. These I have described in this report, and I will attempt to show when and with whom early people of Hale's Farm were in contact and how these small self-reliant villages stood at a threshold: their ancestors were the scattered hunting-gathering-gardening bands who had built the mounds and earthworks across Ohio in the first centuries of our era. Their descendants built the agricultural tribal confederations encountered by the European explorers of the seventeenth century.

## The Environment

The prehistoric Hale Farm site (33Su17) is located in the front yard of the present Jonathan Hale Farm on Oak Hill Road, lot 11, township 3, range 12, in Bath Township, Summit County, Ohio. The site area was estimated from the recovery of prehistoric artifacts and from the thin, discontinuous patches of prehistoric strata and pits. From the north bank of Hale Run the prehistoric site extended about 30 m northward to what had been a smaller east-flowing branch of Hale Run. East of the present 1826/27 Hale House the prehistoric materials appeared concentrated in a roughly 30 to 45 m zone centering about 25 m west of modern Oak Hill Road. A few prehistoric ceramic sherds and one broken chipped stone projectile point were recovered washing out along the north bank of Hale Run about 30 m east of the road but the intervening area had been disturbed by the clay pits and brick burning activities of Hale himself in 1826. Within these 1378 $m^2$, between the branches of Hale Run, the topography is relatively level (see Fig. 1), sloping genty to an old terrace east of the road, and further leveling out. The geological deposits in this portion of the Cuyahoga Valley have been actively reworked by glacial ice, by lakes of ponded melt water from retreating glaciers, and for the past 10,000 years the region has been controlled by the Cuyahoga River which flowed first south and then north along several different channels (Brose et al. 1981; Hall 1980; Rau 1968; White 1953a, 1979; White and Totten 1982; Wittine 1970).

The slopes behind the Hale Farm are composed of rather level Mississippian and Pennsylvanian shales and sandstone formations, deposited in near-tropical seas about 200 million years ago. Over the past million years, the area was scoured by glacial ice, and filled by clays, sands, and gravels as the ice melted. The last glacial ice left large gravel ridges called "kames" along its valley margins. Just southeast of the Hale Farm a series of hills were formed when a channel of the lower Cuyahoga flowed south along the western valley wall to join the upper river at Akron about 14,000 years ago. With lowered water levels in Lake Erie about 3,000 years later, the lower Cuyahoga flowed north along the east side of the present valley. It captured the upper Cuyahoga at Cuyahoga Falls. The old Oak Hill Road channel, filled with clays, silts, and gravels, was covered by a veneer of sandy soils washed from the western valley slopes. Furnace Run and Yellow Creek began to build a level floodplain by seasonal flooding, while they, with some even smaller tributaries, began to dissect the old glacial deposits into smaller and less steep hills and terrace remnants. By 4000 B.C. Lake Erie and its tributary valleys had reached their modern configuration. By that time also the modern post-Glacial climatic patterns and the developed soil associations had established the mixed hardwoods forest communities which were recorded by the first surveyors (Andreas 1980; Gordon 1966, 1969).

The Hale Farm site is located at the juncture of several different soil associations. The prehistoric site itself lies upon nearly level areas of Fitchville silt loams. Small areas of Orrville silt loams and moderately eroded Glenford-Geeburg silt loam and Luray loam soils occur on the slightly steeper knolls and terrace formations to the north and south along Oak Hill Road. On the steep slopes to the west of Hale Farm, soils are predominantly those of the Ellsworth-Mahoning association. Along the Hale Run valley east of the Kame Terrace and knolls east of Oak Hill Road are the poorly drained soils of the Conotton-Oshtemo complex. Over most of the level portions of the floodplain between Hale Run and Furnace Run, east to the Cuyahoga, the soils are Glenford and Chagrin silt or Chili silt loam, while between Hale Run and Yellow Creek most floodplain soils are either gravelly Chagrin silt loam or the slightly alkaline Chili silt loam (Ritchie and Steiger 1974). These soils are of a markedly different agriculture potential. In an unimproved state their yield in bushels of corn per acre would run from over 90 for the Chagrin loam to 70 to 75 for the Fitchville-Orrville silt loam, to less than 50 for the Ellsworth soils (Ritchie and Steiger 1974). Differences in the quality of soils were certainly important to Jonathan Hale, and may also have been significant for the location of the prehistoric site itself.

The typical soil profile of the 2% to 6% Fitchville soils which underlie the Hale Farm site is described as having a 18 cm dark grayish-brown plow zone layer of slightly acid, well-drained silt loam; about an 8 cm layer of light yellowish-brown, strongly acid silt loam; about 20 cm of yellowish-brown and iron-stained acidic, poorly drained, silty clay loam; and a final soil layer of as much as 80 cm of brown, moderately acid silt loam. Below this 150 cm depth lay the sands and gravels of the Pleistocene lake and river deposits. (Ritchie and Steiger 1974:78). In general this soil is seldom flooded and moderately well-drained. It presents little problem for occupation.

At the time of its first prehistoric habitation, the Hale Farm site would probably have represented a small, rather open and grassy area with scattered yellow poplar, white oak, and hickory. To the west the slopes would have

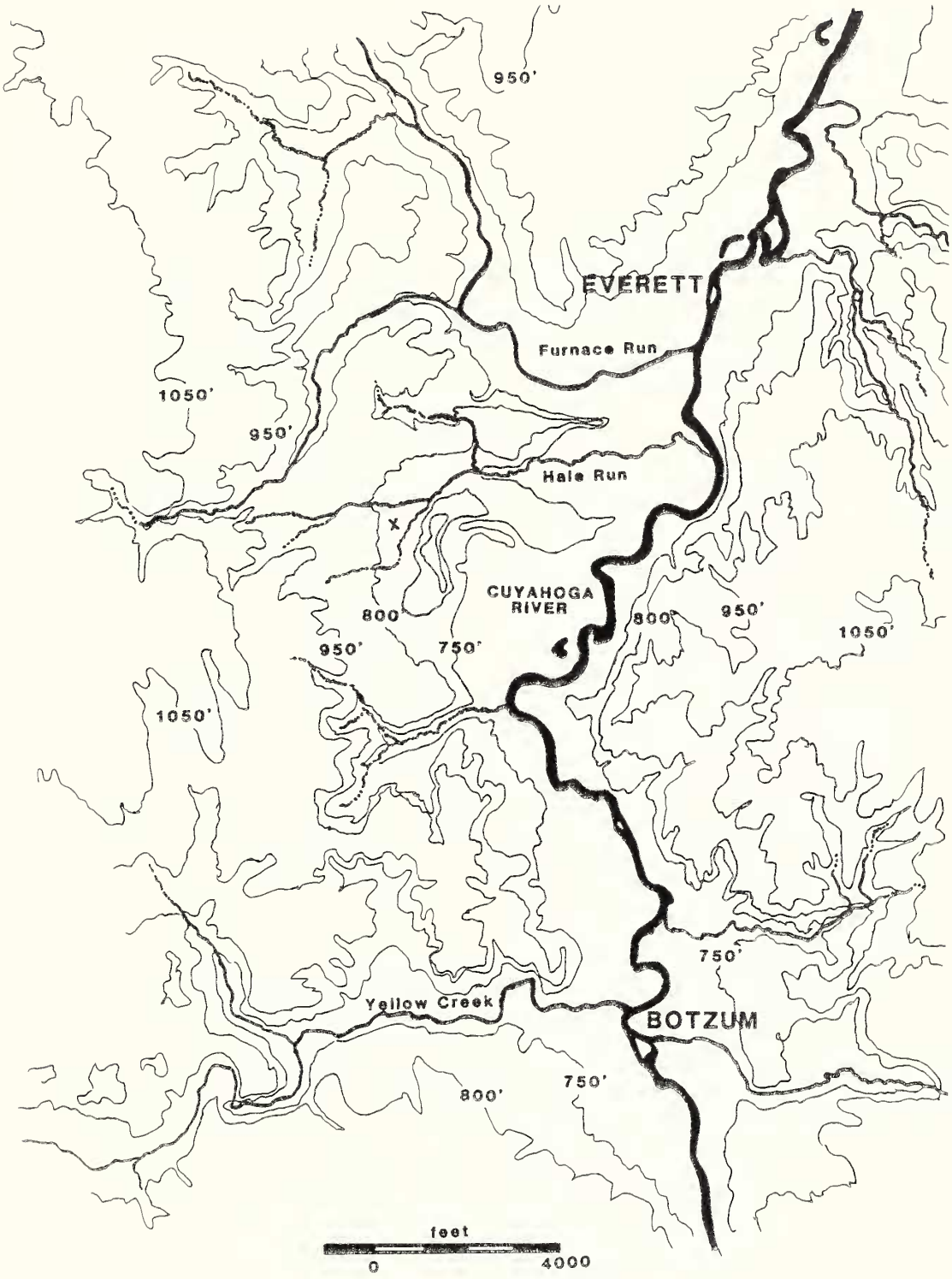



Fig. 1. Location of the Hale Farm site (33Su17).

been covered with a beech-maple forest with hemlock in the ravines. To the east the lower flat floodplains would have had a mixed forest with elm, ash, yellow poplar, locust, walnut, and basswood, while the old Kame Terrace hills would have been covered with black oak, red oak, beech, and maple. (Braun 1950, 1955; Gordon 1966; Horton 1961; Williams 1936, 1949). Numerous flowers, shrubs, and vines covered much of the forest floor save on the open oak lands. Along the runs and rivers, reeds and rushes grew thickly.

Within this wilderness lived a variety of animals including bears, wolves, and cougars. The largest mammal in these forests was the wapiti or American elk, but it is likely that elk would have been found only scattered widely within the valley during the warmer seasons (see Murie 1951). The most common big game in the site area would have been the whitetail deer, while cottontail rabbit, squirrel, and raccoon would have been far more numerous (ODNR 1975).

## The Excavations

Initially, the discovery of the prehistoric occupation at the Hale Farm was fortuitous. The location and nature of the excavation units had naturally been planned to recover information about the nineteenth, rather than the ninth century A.D. Although prehistoric materials were recovered at the base of even the first excavation unit, the investigation of this early occupation was always limited by the historical focus of the archaeological investigations undertaken for the Western Reserve Historical Society. It was further constrained in part by the nature of disturbance due to the subsequent occupations of the area by Miller and Hale. Thus prehistoric structural data recoverable were also limited. The upper surfaces of the four aboriginal features encountered along the north side of Hale Run had all been truncated by nineteenth-century activities. Few continuous stratigraphic profiles connect the bases of these shallow storage pits or cooking hearths. Most of the aboriginal materials were recovered from the fill of storage pits, foundations, and cellars built between 1810 and 1826.

We also discovered that during the continuous historical occupation of that area from 1826 to as late as 1957, there had been occasional excavations for new fences, for cisterns, for driveways, and to rebuttress the slumping banks for Hale Run. Not only had these more recent activities disturbed the early historic and prehistoric levels, they had brought to the surface some of the buried materials which were thus reincorporated into the developing topsoil. It was clear enough that a chipped stone projectile point, an 1835 half-dime, and an aluminum wire-drawn nail did not belong to a single occupation. While those artifacts could be assigned to an appropriate period, that was not possible for fragments of charred bone, or for the empty small postholes which we encountered in disturbed areas of the site. Since we cannot know to which period such items pertain, they have been excluded from the following discussions of the prehistoric component of the site.

All archaeological excavations at the Hale Farm site were based on a 5 ft square grid system (1.52 m) oriented north-south, with the front of the 1826/27 Hale House as its western boundary. The actual units chosen for excavation were determined by a combination of three types of information. First, various historical sources suggested that the original Miller cabin was located just north of Hale Run and due west of Oak Hill Road. Therefore a series of fifteen excavation units in that area were randomly chosen for testing. Secondly, there was a vague legend that the 1870 barn which had been located north of the present driveway, was built over the original occupation. In that area ten excavation units for testing were chosen in order to avoid obvious recent disturbance. Finally, a series of ten test units were chosen to investigate otherwise unaccountable depressions, knolls, or topographic irregularities and to "fill in" the coverage of the area west of Oak Hill Road.

Excavation began by stripping the recent sod from within each test unit. Below that level the excavations proceeded with shovel and trowel to remove soils by a 10 cm depth or to the point where we noted any changes in soil color or texture which might represent a feature such as the top of a pit or the edge of a wall. At that point a measured drawing of the floor of the test unit was made, photographs and samples were taken, and the new feature was given a field provenience number which was assigned to all material recovered in association. Any concentrations of artifacts or biotic remains were treated as separate features. All soils after removal by trowel were screened through 1/4 in or 3/32 in hardware cloth. The decision to expose all features at the level they were first encountered often required excavation of adjacent units and resulted in a rather strange pattern of excavation units (Fig. 2).

Prehistoric archaeological materials were encountered in 26 of the units excavated (Fig. 3), as well as along the northern bank of Hale Run. Yet only three areas of test units revealed prehistoric archaeological features. To the immediate north of the driveway, below the twentieth-century disturbance resulting from the removal of the 1870 barn, a small shallow pit had been dug into the silty clays. This pit, about 61 cm in diameter and 20 cm deep, contained a broken chipped stone point and a single turtle carapace. Possibly the turtle shell had once been used as a bowl.

In parts of three adjacent excavation units just west of Oak Hill Road, another aboriginal pit was located. It had been cut into by one of the posts from the original fence line erected by Hale prior to 1826. Even more shallow than the first pit, it was about 76 cm in diameter, while less than 15 cm at its deepest. In it we found a concentration of

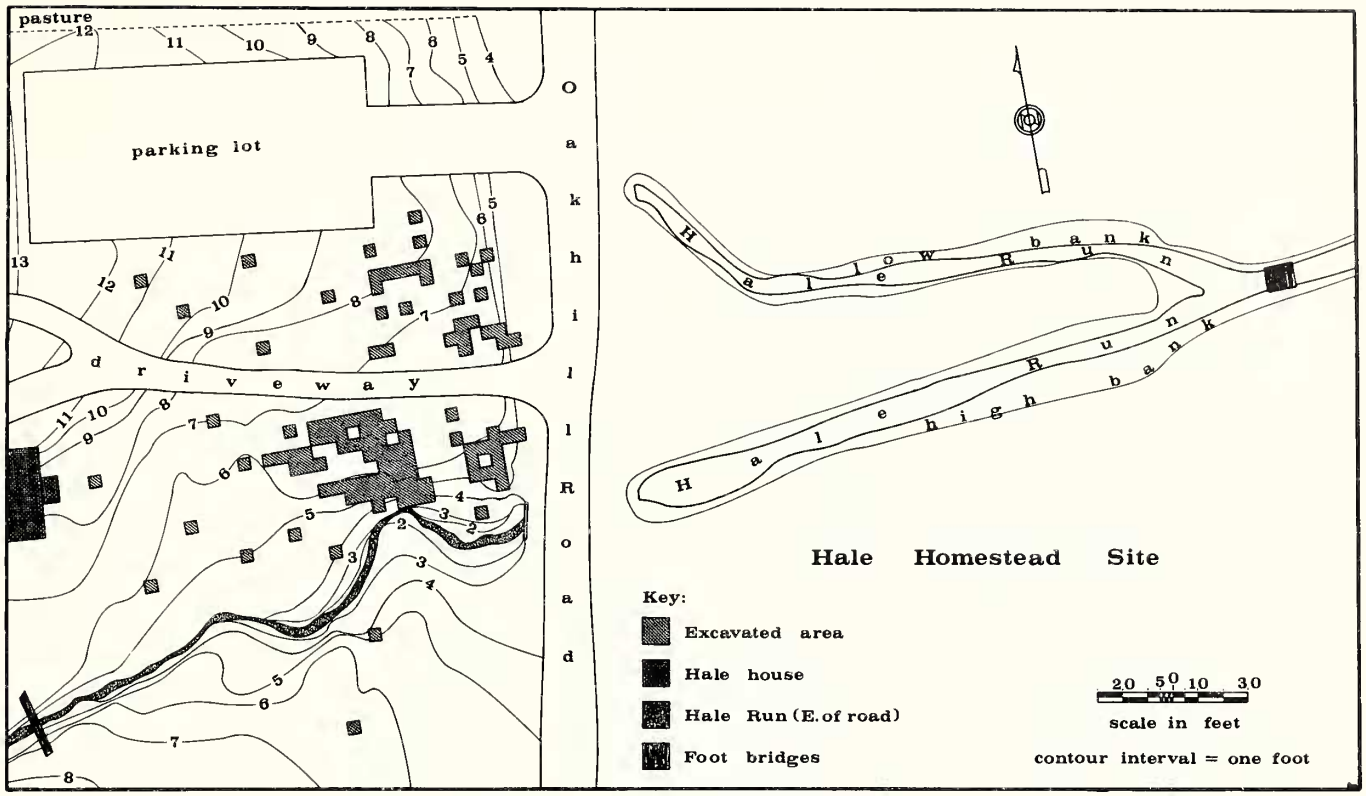



Fig. 2. Excavation units at the Hale Farm site.

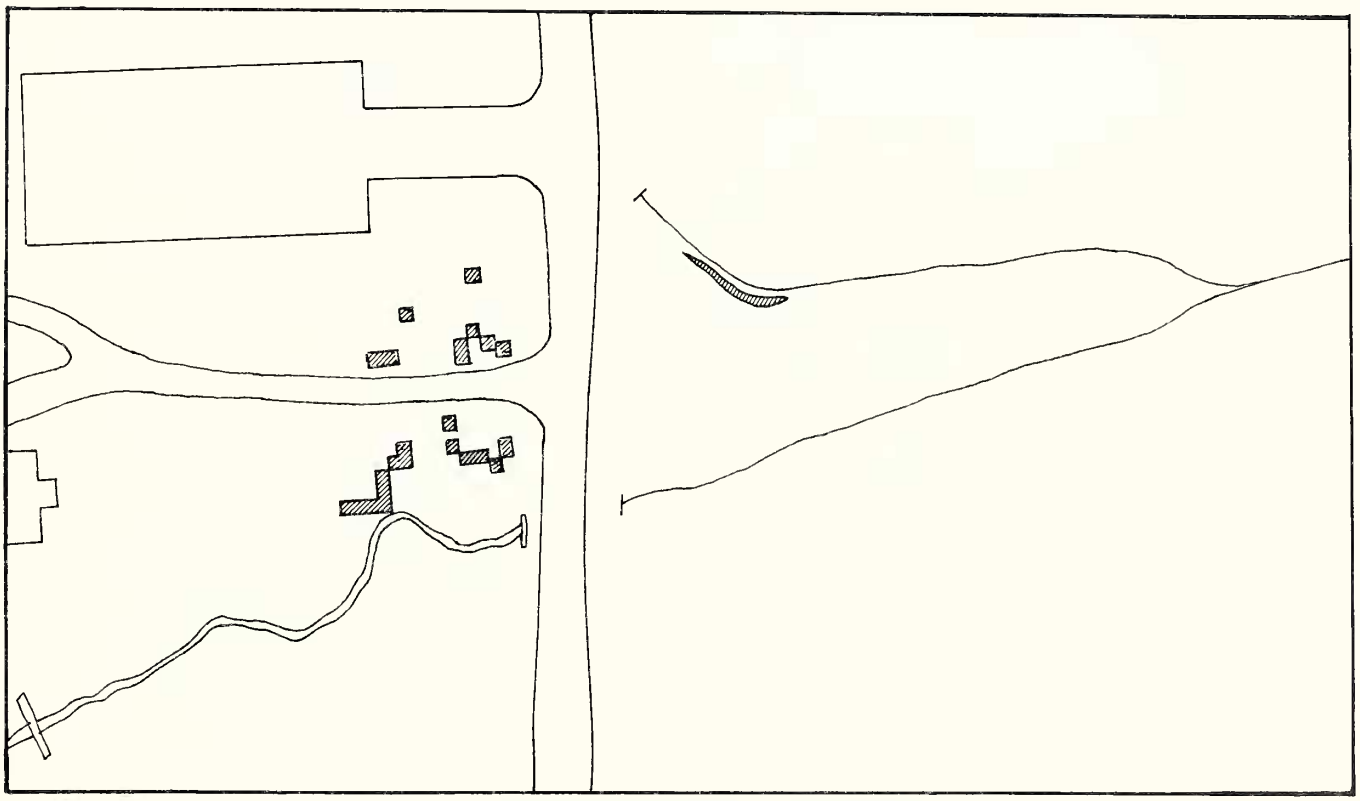


Fig. 3. Areas of prehistoric materials at the Hale Farm site.

26 prehistoric ceramic fragments from two different vessels.

The greatest concentration of prehistoric remains was encountered along the edge of Hale Run between Oak Hill Road and the 1826/27 house. We had excavated two sets of contiguous trenches which crossed at the location of the 1810–27 root cellar below the original cabin. We found a refilled aboriginal storage pit, an aboriginal hearth, eight postholes, and portions of a sheet midden (a scatter of artifacts and charred remains) upon the ground surface where Hale Run had flowed some ten centuries ago. The scale drawings of the north-south trench sidewall stratigraphy, reproduced as Fig. 4, show clearly that these postholes and the associated midden underlay, and thus predate, the early nineteenth-century occupation. However, that nineteenth-century activity had removed large portions of the original site. We were able to expose and record the earlier prehistoric levels only along the floor of our east-west trench (Fig. 5).

The western set of five postholes and one pit may represent a small, more or less round structure about 2.4 to 3.5 m in diameter. If the eastern set of three postholes were the remains of another similar structure, then most of it appears to have been destroyed by Miller when he built his cabin. In the middle of the 1971 digging season, there did not appear to be any significance to the distribution of different types of prehistoric material within this area of the site. And yet, we were primarily concerned with the historic remains, and even at that time we had found as much or more prehistoric material redeposited in historic features. It is nonetheless clear that this area, just north of Hale Run, was the core of the prehistoric site occupation area—just as it was to be the core of Miller's occupation and of Hale himself until 1827.

## Prehistoric Material Recovered

During the excavations at the Hale Farm a variety of prehistoric artifacts and waste was recovered. These came from thin undisturbed aboriginal floor levels, and from the few pits dug for storage or as fire hearths and later filled with trash. We also encountered a larger number of similar prehistoric materials from soils which were disturbed and redeposited by Miller or Hale in the early nineteenth century. Altogether there were 153 chipped stone tools, along with over 4,000 waste flakes, many of which were used; ground and polished stone tools and ornaments; several drilled stone and clay beads; over 500 fragments of aboriginal pottery; and nearly 170 floral and faunal remains.

The detailed analyses of these materials have taken the

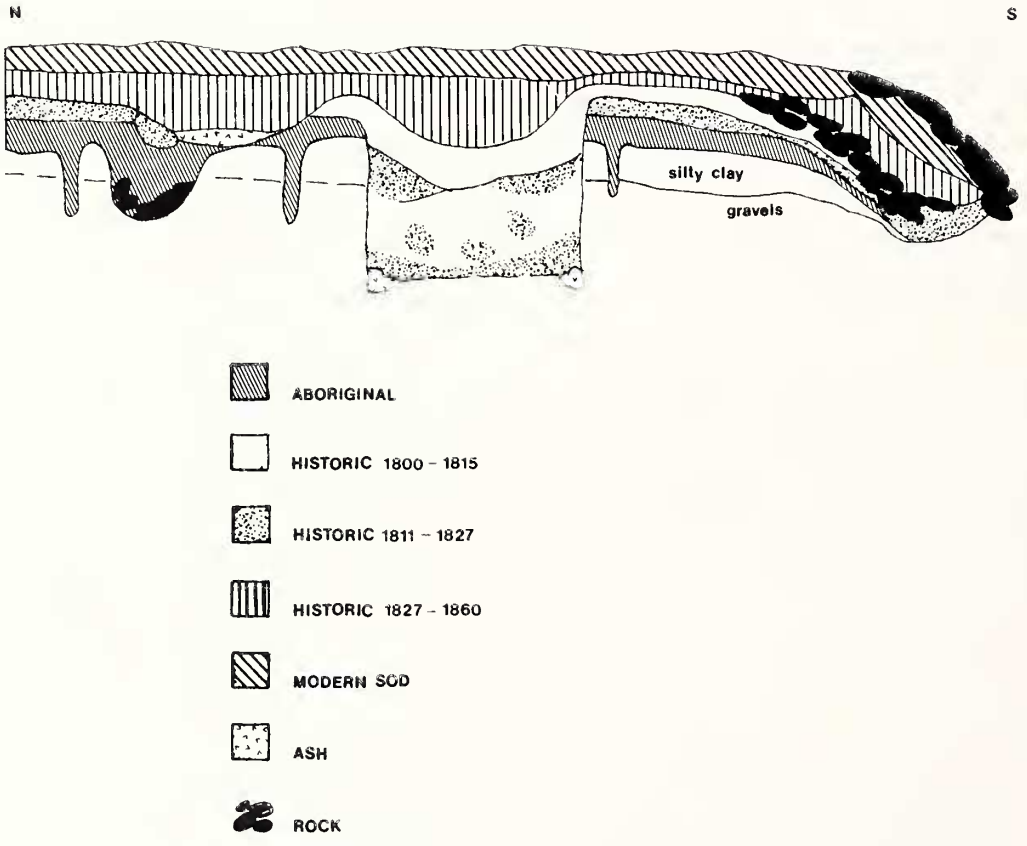



Fig. 4. Stratigraphic profile of trench at the Hale Farm site.

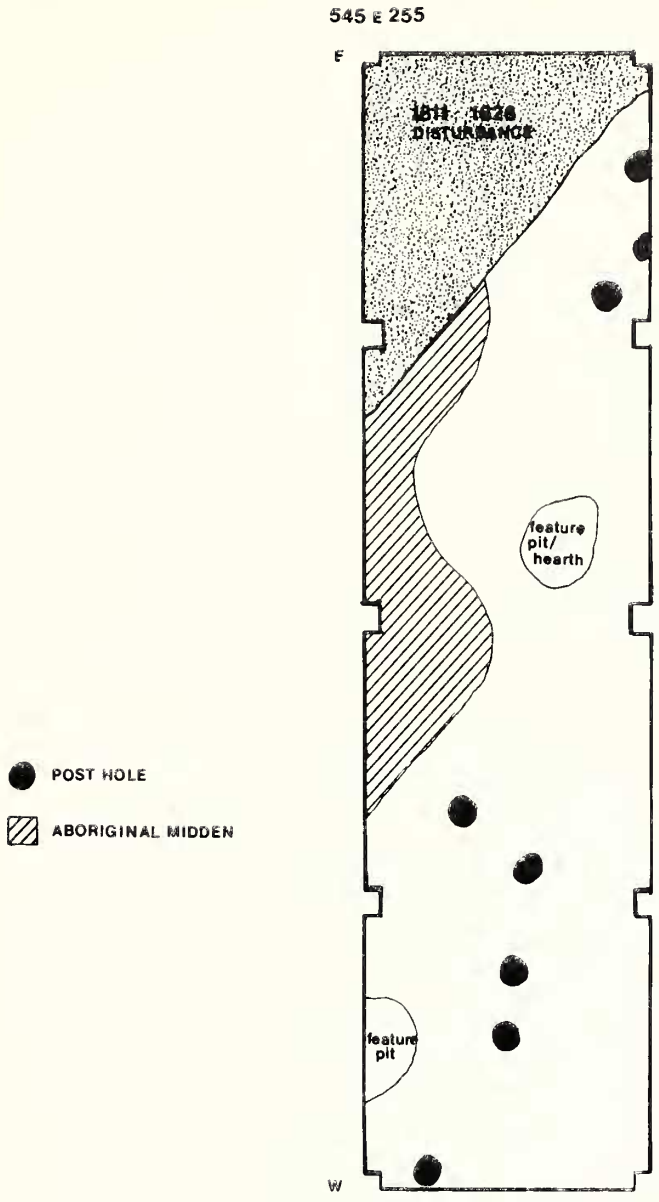



Fig. 5. Floor plan of prehistoric stratum in East West trench at the Hale Farm site.

better part of four years by staff members and volunteers of the Cleveland Museum of Natural History, and while these details may seem rather uninteresting and overspecialized to the general reader, such studies represent the basic data from which archaeologists have been able to reconstruct much of the economy, technology, and social geography of these early inhabitants of the Hale Farm site. And through the stylistic comparison of artifact design and decoration with similar materials from sites across the Great Lakes/Ohio Valley region, it is possible to assign rather closely a date to this occupation. This is in spite of the fact that the nature of the nineteenth-century activities seem to preclude recovering any amount of charred aboriginal organic material which could be submitted for a direct radiocarbon determination of the date.

*Floral and Faunal Remains*

Altogether, over 2,700 fragments of broken, butchered, or burned animal bone, and 56 pieces of charred plant material were recovered from the 1971 excavation. Most of these were either found in historical or in disturbed contexts. Thus they can have no significance for the understanding of the prehistoric site occupation. From what appeared to be stratigraphically intact prehistoric features such as postholes or refilled storage/cooking pits, we recovered fragments of only 160 animal bones and only 9 charred plant remains.

The animal bone is described in Table 1. Although most of the available meat comes from the two elk, it is clear that a wide range of animals was being used for food. The elk, represented by skull fragments and limb bones primarily, may have been killed and butchered away from this location. The young bear must have been taken between spring and late fall. The deer were represented by the jaw of a yearling and by parts of the skull and several ribs and proximal limbs of an adult. The antlers of the adult deer and one elk had been shed, suggesting that they were taken between late winter and summer. Tooth eruption and wear on the yearling deer indicate an age of about 15 months (Severinghaus 1949). Most fawns are dropped between May and late June (ODNR 1975). The turtle and the fish remains found, along with the passenger pigeon bones, are frequently indications of early spring or late summer hunting. All in all, analysis of the animal bones (viz Cleland 1966) reveals that most of the prey were probably hunted between July and September (see Cleland 1966, 1976; Ziegler 1973).

This interpretation is complemented by analysis of the small number of plant remains. These consisted of a single charred half of a hickory nut shell, three wild grape seeds, three charred squash or pumpkin seeds, and two fragments of what might have been a single cut cob of ten- or twelve-row maize. While all of these plant products could have been harvested between late August and early November, the hickory nuts could have easily been stored for a long time. The maize cob could have been discarded just after harvest or could also have been dried. However, based upon the historic accounts (Ford 1977); one might expect only the kernels to have been stored. The grapes, normally ripe in late September, could not have been kept long given the damp winters of the valley.

The plant and animal remains together suggest that the site was occupied in the late summer. During that season hunting parties brought back two elk, taken from some other part of the valley. All of the plants and most of the animals remains recovered should have been available within the varied environment represented by the Cuyahoga River itself, its western valley slopes, and the tributary floodplains of Furnace Run and Yellow Creek, bisected by Hale Run along which the site was built.

TABLE 1
Animal Bone From Prehistoric Context At The Hale Farm Site

| *Species* | *Number of bones present* | *Minimum Number of Individuals* | *Usable Meat for Individuals* | *Total Pounds Usable Meat Per Species* | *Percentage of Usable Meat at Site* |
|---|---|---|---|---|---|
| American Black Bear | | | | | |
| immature | 4 | 1 | 75 lb | 75 | 10.5% |
| Whitetail Deer | | | | | |
| adult | 40 | 2 | 80 | 160 | 22.0% |
| immature | 13 | 1 | 40 | 40 | 5.5% |
| American Elk | | | | | |
| adult | 21 | 2 | 200 | 400 | 56.0% |
| Racoon | 13 | 3 | 1.5 | 4.5 | 0.5% |
| Beaver | 2 | 2 | 7 | 14 | 2.0% |
| Passenger Pigeon | 5 | 2 | 0.5 | 1 | — |
| Turkey | 6 | 2 | 10 | 20 | 3.0% |
| Turtle | 17 | 1 | 0.5 | 0.5 | — |
| Suckers | 39 | 7 | 1 | 7 | 1.0% |
| Total | 160 | 23 | — | 712. | 100.5% |

*Stone Artifacts and Debitage*

There were several different sources of stone from which Hale Farm tools were made. Most of the unfinished chips and cores are debitage representing the knapping of the Bois Blanc, Columbus/Delaware, or Onondaga cherts which occur as nodules of chert in the Silurian and Devonian limestone and dolomite strata forming the Niagara escarpment. The outcrops nearest to the Hale Farm would be those in Monroe County, Michigan, in Essex County, Ontario, or in Erie County, New York. Yet cobbles and pebbles of these types of chert are quite common throughout northeast Ohio as stream gravels washed from the glacial deposits pushed south during the late Pleistocene.

A number of finished tools and a surprising amount of the unused debitage recovered at the Hale Farm site came from working tabular Plum Run, Pipe Creek, and Upper Mercer flint which occurs in bands and as lenses interbedded with the Mississippian strata of shale and coal in eastern Ohio. A number of these outcrops occur in Stark, Erie, and Coshocton counties, Ohio, at distances from 30 to 75 km from Hale Farm. Many of these outcrops show signs of aboriginal quarrying and several have yielded the waste from the initial stages of knapping (Stout and Schoenlaub 1945).

The lithic categories employed in the analysis of the 153 tools recovered at Hale Farm, follow those outlined by Brose (1967b, 1978c), with the aim to define functional artifacts on the basis of selective micro-wear studies and the reconstruction of manufacturing sequences. Table 2 illustrates the frequencies of formal chipped stone tools recovered from the Hale Farm site, and indicates whether tabular flint or nodular cherts were the source. A similar frequency illustration of the debitage, or technological byproducts of the knapping activities are presented on Table 3. By combining both sets of information, it has been possible to consider the alternative technological sequence which shows major differences from later sites of the general period. Alternative sequences of lithic manufacture have been recognized at functionally differing site types within this same temporal phase (Brose 1976a, 1978a, 1978c). These sequences involve alternative sources of raw materials, differing initial core preparation

TABLE 2
Absolute Frequencies of Formal Lithic Tools at Hale Farm

| *Functional Tool Category* | *Irreg. Blades* | *Bifacial Scrapers* | | *Drills* | | *Triangular Projectile Points* | | *Triangular Knives* | | *Flake Gravers* | | *Bifacial Knives* | | *Wedges* | *Gouges* | *Unifacial Scrapers* | | *Subtotal* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lithic Source | TF | TF | NC | TF | NC | TF | NC | TF | NC | TF | NC | TF | NC | NC | NC | TF | NC | TF | NC | |
| | 7 | 2 | 5 | 1 | 2 | 24 | 43 | 5 | 14 | 0 | 0 | 7 | 19 | 2 | 6 | 3 | 7 | 53 | 100 | 153 |

*Key*
TF: Tabular Flint
NC: Nodular Cherts

TABLE 3
Lithic Debitage From All Units at Hale Farm Site

| *Reduction Stage* | | *Tabular Flint* | | *Nodular Cherts* | | *Total* | |
|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % |
| Pebble cores | used | 2 | 0.05 | 0 | 0 | 2 | 0.05 |
| | unused | 9 | 0.22 | 0 | 0 | 9 | 0.22 |
| Block cores | used | 0 | 0 | 3 | 0.07 | 3 | 0.07 |
| | unused | 0 | 0 | 2 | 0.05 | 2 | 0.05 |
| Decortication flakes | used | 1 | 0.02 | 99 | 2.44 | 100 | 2.46 |
| | unused | 282 | 6.95 | 400 | 9.85 | 682 | 16.80 |
| Primary shatter | used | 6 | 0.15 | 14 | 0.35 | 20 | 0.50 |
| | unused | 283 | 6.97 | 286 | 7.05 | 569 | 14.02 |
| Secondary flakes with platform | used | 13 | 0.32 | 25 | 0.62 | 38 | 0.94 |
| w/platform | unused | 576 | 14.19 | 875 | 21.56 | 1451 | 35.75 |
| without platform | used | 11 | 0.27 | 30 | 0.74 | 41 | 1.01 |
| | unused | 545 | 13.43 | 596 | 14.68 | 1141 | 28.11 |
| TOTALS | | 1728 | 42.6 | 2330 | 57.4 | 4059 | 100% |
| SUBTOTAL | used | 33 | 0.81 | 171 | 4.22 | 204 | 5.03 |
| | unused | 1695 | 41.76 | 2159 | 53.19 | 3854 | 94.95 |

and utilization, differing application of heat treatment, differing reconstructed preform, blank, and finished artifact sequences with different functions for morphologically similar artifacts.

Some attempt was made to identify, in quasi-ethnographic terms, the inferred function of these "finished artifacts" and the quantities of utilized debitage. The degree of detailed investigation needed for much statistical confidence in such identification is unfortunately not present in the sample used in this study. Nonetheless it has been possible to reconstruct a model of the lithic reduction strategy used at the Hale Farm (Fig. 6). Hard hammer and soft hammer percussion were the major manufacturing technique at all stages, although it was more commonly employed in the earlier portions. Pressure retouch occurred as the final technique for many of the final tool types, although it occurred earlier for specific artifacts and was altogether absent for some. Thermal alteration, never common in any Whittlesey tradition lithic assemblage (viz Brose 1973b, 1980, 1985a, 1985b), occurred at several different times in the reduction sequence, and again for some tools seemed to be absent entirely. The products of this lithic strategy, whether unfinished preforms, flake debitage, or finished formal artifacts, displayed variations in their indication of utilization such that less than 20% of the functional stone tools at the Hale Farm consist of utilized debitage and utilized intermediate reduction sequence forms (Brose 1973b), while in

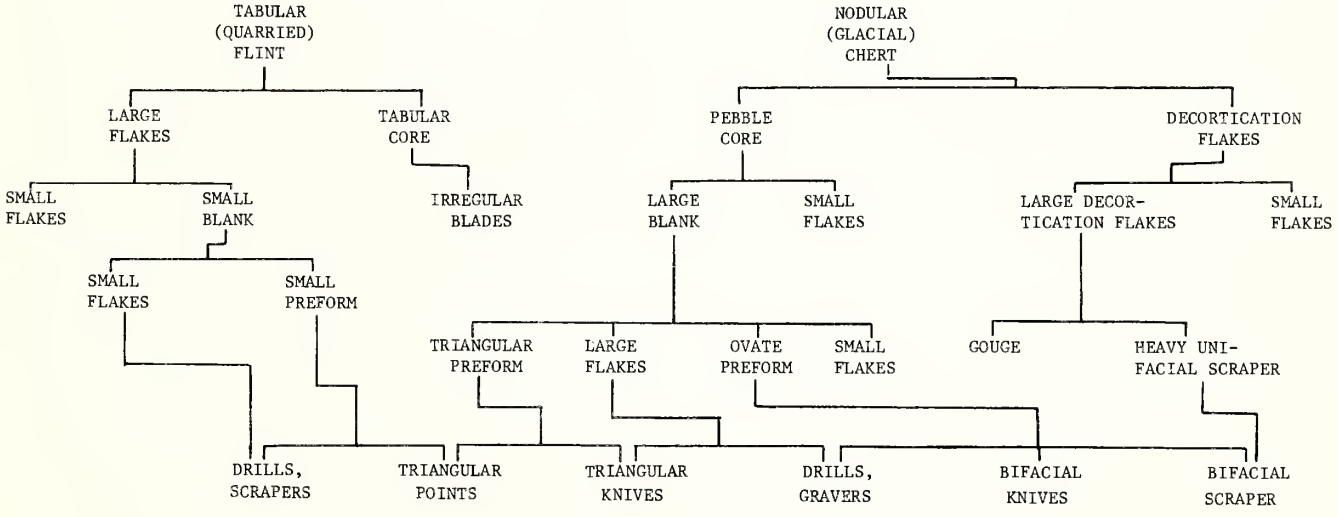



Fig. 6. Reduction sequence as reconstructed.

other coeval sites these categories may represent over 75% of the functional lithic assemblage (e.g., Brose and Scarry 1976). Many of the intermediate reduction forms also appear to have been used to duplicate the functions of some of the heavy-duty formal tools (e.g., triangular preforms were utilized as knives, large decortication flakes were utilized as gravers). There is considerable redundancy within this system: however inefficient such a system may appear, the possible alternative sequences made it rather stable and very flexible.

Known archaeological sites of this early Late Woodland period show little demographic differences between what are seen as summer multifamily horticultural villages (along alluvial floodplains in mixed mesophytic forests) and spring or fall fishing-fowling sites (along the lakeshore at river mouths) (Brose 1976b, 1978c). Midwinter occupation sites are known in upland rock shelters or at spring locations. These appear to represent smaller family segments engaged in a rather focused hunting economy. Summer villages such as the Hale Farm site reveal a mixed economy. The site shows a utilization of lithic sources which approximates their relative local availability. At winter hunting camps, however, glacially derived local chert nodules were selected over quarried sources. These differences in the lithic tool assemblages and in the reduction strategies between summer villages and winter campsites seem relatively minor, although in the winter campsites most cores from tabular quarried flint received thermal alteration and appear to have been used predominantly for irregular blade production. The limited thermal alteration of nodular glacial cherts appears late in the reduction sequence at many winter campsites and, where present, seem restricted to immediate pre-pressure retouch of triangular preforms into projectile points and hafted knives. At the Hale Farm site thermal alteration appears to have been applied to about 60% of all quarried flint prior to any knapping and to about 35% of all nodular chert following its reduction to a large rough blank.

The relative frequencies of functional tool categories are significantly different from those at winter sites. At this summer occupation there are several varieties of small speical purpose tools, numerous projectile points, and a number of small scrapers. However, at winter occupations (viz Brose and Scarry 1976; Lee, Brose, and Weisman 1983; McKenzie et al. 1974) the tool assemblage was characterized by fewer different tool types. There was also a lower frequency of projectile points, and a large number of knives and heavy scrapers. In general, the lithic assemblage at summer villages reflects greater evidence for what Binford (in Whallon 1974) has termed curatorial activity, and for a much wider range of extractive activities than do winter campsites. Summer sites also reflect an industrial sequence with more carefully chosen raw materials, more evidence for thermal alteration and at earlier and less artifact-specific production stages, and a higher frequency of nonspecific utilized debitage than in winter campsites (Brose 1978c).

TABLE 4
Metric Attributes (mm), Unifacial Scrapers,
All Units Hale Farm Site (33Su17)

| *Catalogue Location* | *Maximum Length* | *Maximum Width* | *Maximum Thickness* | *Shape* |
|---|---|---|---|---|
| H73BD 9576 | 30.65 | 16.55 | 5.35 | Lunate |
| H116S 9618 | 29.55 | 22.85 | 12.85 | Thumb-nail |
| H170HG | 19.45 | 14.25 | 5.10 | Triangular |
| H78AC 9590 | 21.45 | 14.65 | 4.30 | Triangular |
| H136AK 9506 | 19.0 | 14.45 | 5.40 | Rhombridal |
| H20EE 9508 | 21.85 | 10.95 | 4.95 | Ovate |
| H23DK 9561 | 13.25 | 8.30 | 3.35 | Thumb-nail |
| H101AP 9586 | 16.2 | 14.65 | 2.65 | Rhombridal |
| H131A 9584 | 22.75 | 13.65 | 5.75 | Ovate |
| H135KY | 20.0 | 15.65 | 8.85 | Convergent |

Beyond this there is little in the assemblage of chipped stone tools from Hale Farm of great interest (Pl. II). The unifacial scrapers (Table 4), bifacial scrapers (Table 5), triangular preforms and knives (Tables 6 and 7), or drills (Table 8) all seem similar to those from contemporary sites such as the Bass Lake and Columbia Road sites, and to those from components representing the early phases of the Whittlesey tradition after A.D. 1200 (Brose 1973b, 1976b, 1978a, 1980). Assuming that drills were for drilling and scrapers were for scraping, and recognizing that the differing frequencies of different tools probably reflect

TABLE 5
Metric Attributes (mm)
Bifacial Scrapers from Hale Farm Site
(x = Broken)

| *Catalogue Location* | *Maximum Length* | *Maximum Width* | *Maximum Thickness* | *Shape* |
|---|---|---|---|---|
| 9523 | | | | |
| H44C *9535 | 25.45 | 24.35 | 9.95 | Triangular |
| H65B 9549 | 18.60 | 19.65 | 3.95 | Sub-triangular |
| H86AV 9536 | 35.60 | 30.0 | 6.85 | Sub-triangular |
| H67AQ 9500 | 28.0 | 20.25 | 10.35 | Ovate |
| H12S *9605 | 26.20 | 23.10 | 10.0 | Ovate |
| H134BB 9505 | 26.20 | 12.85 | 4.0 | Lunate |
| H138Y | 20.55x | 15.85x | 4.45 | Triangular |


Pl. II. Chipped stone artifacts from the Late Woodland component at the Hale Farm site.

TABLE 6
Attributes (mm) of Triangular Preforms/Bifacial Knives
(x = Broken)

| *Catalogue Location* | *Maximum Length* | *Maximum Width* | *Maximum Thickness* | *Striae, Grinding, Beveling or Edge Damage Present?* |
|---|---|---|---|---|
| 9536 H67AH | 33.65 | 29.35 | 9.85 | Yes |
| 9536 H67AQ | 28.0x | 20.45x | 11.0 | None |
| 9618 H170HG | 20.35x | 14.35x | 5.15 | None |
| 9618 H170AG | 23.20x | 30.25x | 11.40 | None |
| 9530 H58U | 28.90 | 21.25 | 7.85 | None |
| 9538 H69AW | 44.75 | 22.15 | 7.45 | None |
| 9618 H170AC | 21.95 | 23.85 | 10.10 | None |
| 9618 H170AG | 35.35 | 22.45 | 11.55 | None |
| *9555 H94C | 35.95 | 22.75 | 7.10 | Yes |
| 9656 H214KT | 29.0 | 20.55 | 8.55 | None |
| 9656 H214KR | 32.0 | 29.9 | 7.75 | None |
| 9626 H180DI | 23.25 | 14.55 | 8.10 | None |
| 9578 H120N | 28.85x | 20.0 | 9.0 | None |
| 9519 H33S | 31.55 | 15.85 | 6.75 | None |
| 9519 H33S | 31.55 | 15.85 | 6.75 | None |
| 9519 H38CK | 21.45 | 22.50 | 8.65 | Yes |
| 9596 H144DI | 11.35x | 17.15 | 7.65 | None |
| 9508 H23BV | 41.35 | 30.55 | 9.35 | None |
| 9584 H27A | 38.1 | 15.4 | 7.85 | None |
| 9617 H16BJ | 17.0x | 11.45x | 4.85 | None |
| 9574 H110AC | 13.0x | 9.10 | 3.60 | None |
| 9644 | 10.10x | 17.85 | 5.55 | None |
| 9618 H170AF | 17.25 | 25.45x | 7.0 | None |
| 9623 H177GR | 22.0x | 14.45 | 6.45 | None |
| 9547 H82E1 | 59.10 | 34.55 | 12.55 | None |
| 9541 H172AF | 23.35x | 23.20 | 9.45 | None |

TABLE 7
Attributes (mm) of Triangular Knives
(x = Broken)

| *Catalogue Location* | *Maximum Length* | *Maximum Width* | *Maximum Thickness* | *Striae, Grinding, Beveling or Edge Damage Present?* |
|---|---|---|---|---|
| 9560 H100B | 26.75 | 20.6 | 4.45 | Yes |
| 9561 H101AD | 25.85 | 18.85 | 3.25 | Yes |
| 9560 H100A | 27.05 | 16.25x | 3.65 | None |
| 9560 H100G | 30.95 | 21.65 | 5.55 | Yes |
| 9560 H100D | 28.0 | 19.65 | 6.75 | None |
| 9560 H100E | 43.25 | 28.75 | 10.0 | Yes |
| 9679 H175A | 18.0x | 14.0 | 4.65 | None |
| 9545 H78AB | 14.65x | 15.35 | 5.90 | None |
| 9642 H204CP | 20.55x | 18.85 | 7.65 | None |
| 9618 H170AD | 25.65 | 23.25 | 7.55 | None |
| 9614 H166AH | 18.55x | 15.35 | 4.25 | None |
| 9647 H204EQ | 13.75x | 14.85 | 4.45 | Yes |
| 9622 H176HI | 13.75x | 16.20 | 5.75 | Yes |
| 9530 | 18.95 | 13.65x | 3.75 | None |
| 9565 H105A | 35.25x | 21.65x | 4.55 | Yes |
| 9569 H109I | 26.55x | 21.45 | 7.35 | Yes |
| 9564 H104H | 22.8x | 13.55x | 4.0 | None |
| 9563 H103FY | 14.9x | 14.7 | 3.35 | None |
| 9566 H106DI | 12.25x | 13.4 | 3.25 | Yes |

differing site-to-site task emphases, there does not seem to be much major difference in the tools themselves during the early Late Woodland in this area except for the projectile points (Table 9).

Traditionally, in late prehistoric sites, the most diagnostic chipped stone artifacts have been the triangular projectile points, and variations in width and base shape have been used to order assemblages in time. The single broadest triangular projectile point does have a concave base, and the single narrowest triangular projectile point has a straight base. However, the statistical analysis of

TABLE 8
Metric Attributes (mm) of Drills From Hale Farm

| *Catalogue Location* | *Point Type* | *Max. Length* | *Max. Width* | *Max. Thickness* | *Shoulder To Base* | *Base Width* | *Min. Haft Width* | *Haft To Base* |
|---|---|---|---|---|---|---|---|---|
| 9499 H1105 | | 46.5 | 19.7 | 8.0 | 16.1 | 19.7 | 6.6 | 30.4 |
| 9532 H61AL | | 18.55 | 8.25 | 3.20 | — | — | — | — |
| 9532 H61AM | | 32.15 | 10.85 | 10.10 | — | — | — | — |

TABLE 9
Attributes (mm) of Triangular Projectile Points
(x = Broken)

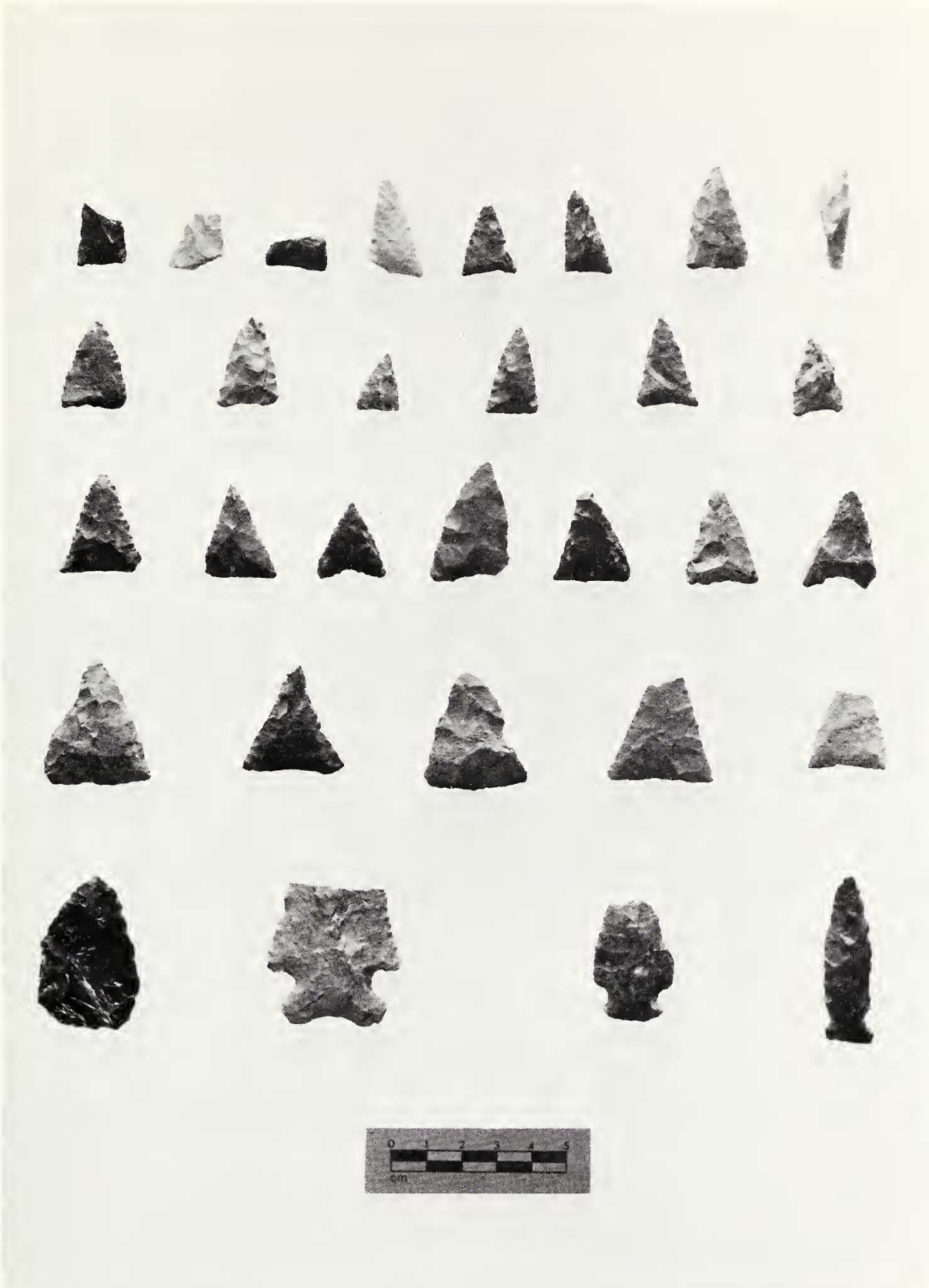
| *Catalogue Location* | *Maximum Length* | *Maximum Width* | *Maximum Thickness* | *Base Type* |
|---|---|---|---|---|
| 9644 H201GA | 14.95x | 10.25 | 3.20 | Concave |
| 9643 H200HE | 12.65x | 11.35 | 3.15 | Straight |
| *9618 H170C1 | 30.1 | 19.9 | 6.6 | Straight |
| *9612 H163AE | 26.2 | 17.7 | 4.2 | Straight |
| 9609 H160BC | 21.6 | 14.4 | 4.6 | Straight |
| 9612 H163AF | 11.0x | 9.2x | 2.7x | x |
| 9617 H169 | 19.8 | 15.7 | 2.8 | Straight |
| 9629 H183FU | 24.6 | 15.7 | 4.4 | Straight |
| 9623 H177GD | 12.4x | 17.7 | 4.1 | Concave |
| 9629 H183MN | 19.1 | 11.5x | 3.4 | Straight |
| *9635 | 21.9 | 19.8 | 3.7 | Straight |
| 9629 H18?AA | 18.3x | 17.9 | 6.3 | Concave |
| 9595 H143D | 27.3 | 18.1 | 5.6 | Straight |
| 9586 H131D | 21.75 | 23.75 | 5.5 | Concave |
| 9589 H135LU | 16.25x | 13.5 | 4.75 | Straight |
| 9647 H204CR | 25.20 | 12.40x | 5.55 | Straight |
| 9545 H78AD | 29.25 | 11.00x | 5.45 | Straight |
| 9548 H840 | 24.10 | 15.10 | 4.70 | Straight |
| 9597 H145DG | 24.45 | 13.70 | 4.55 | Straight |
| 9530 H-58 | 19.10x | 14.0 | 3.65 | Concave |
| 9644 H201 | 10.0x | 17.65 | 5.50 | Straight |
| 9679 H175 | 17.85 | 14.15 | 4.74 | Concave |
| 9622 H176HI | 13.15x | 16.25 | 5.75 | Straight |
| 9570 H-136AR | 14.15x | 19.25 | 5.35 | Concave |
| 9545 H78AB | 14.55x | 15.55 | 6.0 | Straight |
| 9545 H78AD | 30.65 | 11.45x | 5.65 | Straight |
| 9536 H67AH | 33.45 | 25.40 | 9.85 | Concave |
| 9614 H166AH | 18.65 | 15.15x | 3.95 | Straight |
| 9618 H170AF | 17.15x | 25.35x | 6.95 | Straight |
| 9574 H110AC | 12.70 | 9.20x | 3.45 | Concave |
| 9647 H204CP | 25.35x | 14.0x | 5.10 | Straight |
| 9618 H170AC | 16.0x | 26.10x | 9.65 | Straight |
| 9623 H177GR | 13.55x | 22.35x | 7.65 | Concave (?) |
| 9647 H204EO | 13.75x | 13.65x | 4.35 | Concave |
| 9651 H208GR | 16.85x | 15.90 | 5.95 | Straight |
| 9656 H214KP | 17.95 | 12.85x | 3.65 | Straight |
| *9656 H214KU | 16.75 | 12.60 | 3.85 | Straight |
| 9552 H90D | 20.20x | 16.20 | 3.40 | Concave |
| 9537 H65? | 19.15 | 10.35 | 4.45 | Straight |

| *Catalogue Location* | *Maximum Length* | *Maximum Width* | *Maximum Thickness* | *Base Type* |
|---|---|---|---|---|
| 9509 | | | | |
| H24A | 12.35x | 17.0 | 2.75 | Concave |
| H20ED | 9.80x | 22.70 | 4.35 | Concave |
| 9644 | | | | |
| H201GP | 15.65x | 15.35x | 4.60 | Concave |
| 9644 | | | | |
| H201GA | 14.95x | 10.25 | 3.20 | Straight |
| 9643 | | | | |
| H200HE | 12.65x | 11.35 | 3.15 | Concave |
| *9618 | | | | |
| H170CI | 30.1 | 19.9 | 6.6 | Straight |
| *9612 | | | | |
| H163AE | 26.2 | 17.7 | 4.2 | Straight |
| *9619 | | | | |
| H172AE | 36.2 | 29.8 | 9.1 | Straight |
| 9609 | | | | |
| H160BC | 21.6 | 14.4 | 4.6 | Straight |
| 9612 | | | | |
| H163AF | 11.0x | 9.2x | 2.7x | x |
| 9617 | | | | |
| H169 | 19.8 | 15.7 | 2.8 | Concave |
| 9545 | | | | |
| H78AC | 18.85x | 14.45x | 3.95 | Straight |
| *9592 | | | | |
| H145DG | 23.75 | 13.80 | 4.40 | Straight |
| *9531 | | | | |
| H57A | 25.75 | 22.35 | 3.65 | Concave |
| *9535 | | | | |
| H65A | 26.95 | 20.75 | 5.50 | Straight |
| 9530 | | | | |
| H158EX | | | | |
| (9608) | 18.10 | 14.9 | 5.55 | Concave |
| 9512 | | | | |
| H30FF | 20.55x | 12.55 | 4.35 | Straight |
| 9511 | | | | |
| H281 | 18.55 | 14.50 | 4.75 | Concave |
| 9519 | | | | |
| H38CZ | 17.0 | 14.75 | 3.45 | Straight |
| 9513 | | | | |
| H31AR | 25.0x | 21.45 | 6.75 | Concave |
| 9574 | | | | |
| H110N | 30.25x | 30.10 | 5.10 | Straight |
| 9574 | | | | |
| H110P | 22.20x | 22.0 | 4.80 | Straight |
| *9574 | | | | |
| H110Q | 30.85 | 28.80 | 4.55 | Straight |
| *9574 | | | | |
| H110R | 28.10 | 23.65 | 4.90 | Straight |
| 9577 | | | | |
| H119Z | 19.25x | 15.85x | 5.0 | x |
| 9656 | | | | |
| H214KQ | 15.25 | 9.85 | 5.10 | Straight |
| 9656 | | | | |
| H214KV | 27.25 | 6.65 | 4.45 | Straight |
| 9656 | | | | |
| H214KS | 22.35 | 15.0 | 6.20 | Straight |

length/width ratios show that the complete straight base points (n = 23; $\bar{x}$ = 1.53; s.d. = 59) and the complete concave base points (n = 7; $\bar{x}$ = 1.20; s.d. = 1.08) both lie within the normal length/width distribution for all 30 unbroken points ($\bar{x}$ = 1.45; s.d. = 0.63). That is, it is statistically proper to consider these all as representing the normal variation within a single population. Although virtually identical projectile points were first formally described as Madison points by Scully (1951), the most detailed typological analysis of such projectile points in the Great Lakes area is that by W. Ritchie (1971:13–14, Pl. XVI; see also Converse 1964; Luedtke 1978). Ritchie had described the Madison point in New York as having replaced the somewhat larger and broader Levanna point with their more concave bases. Levanna points were common from A.D. 900 to A.D. 1300 (Ritchie 1971:31). Morphologically all of these Late Woodland projectile points from the Hale Farm site are transitional but are best seen as an early varient of the New York Madison points rather than as a late variant of Levanna type (cf. Fitting et al. n.d.:10). This suggests the Hale Farm points (Pl. III) should date to between A.D. 1000 and A.D. 1200.

As at most late archaeological sites in northeast Ohio, not all of the chipped stone knives/points were as recent as the site itself (Brose 1973b, 1975, 1976a, 1980). A number of notched Archaic projectile points (some broken) were recovered from Hale Farm (Table 10). Most of these are not very diagnostic in terms of the specific temporal periods they represent, but the resemblance to the types Otter Creek (Pl. III, bottom row, second) to Normanskill (Pl. III, bottom row, third) or Lamoka (Pl. III, bottom row, fourth) suggest they may all have been made between 4000 and 2500 B.C. (Ritchie 1971:29–30, 37–38, 40–41, Pls. XIII, XIV, XVIII, XX, and XXI). Certainly there are numerous Middle/Late Archaic sites in this portion of the Cuyahoga Valley which were occupied at that time (Brose 1975; Brose et al. 1981). A final class of chipped stone tools recovered from the Hale Farm are represented by nine whole and fragmentary split shale or slate knives (Table 11). All display crudely chipped curved sides with battered and often scratched edges, presumably as the result of heavy cutting use of some sort (Keeley 1974, 1980). Similar split shale knives were noted at the Boston Ledges shelters (Brose and Scarry 1976; Read 1880) which yielded ceramics similar to the Hale Farm site.

In addition to the chipped stone materials, the Hale Farm site excavations yielded four drilled limestone and fired clay beads; three fragmentary drilled gorgets, two of slate and one of sandstone; and a single celt (axe or adze) of granodiorite (Table 12). Not one of these artifacts is particularly diagnostic; all have a wide distribution in time and space within the aboriginal cultures of the eastern Woodlands. Other than the celt these artifacts were found in somewhat disturbed contexts. The celt was found em-




Pl. III. Chipped stone projectile points from the Hale Farm site.

TABLE 10
Metric Attributes (mm) of Archaic Points, All Units

| Catalogue Location | Maximum Length | Maximum Width | Maximum Thickness | Point Attribute Chart: Shoulder to Base | Base Width | Min. Haft Width | Haft to Base | Depth of Bifurcation or Indent | Grinding or Beveling Present? |
|---|---|---|---|---|---|---|---|---|---|
| 9521 H42CW | 51.35x | 41.95 | 6.85 | 7.20 | 20.55 | 7.55 | 6.2 | | No |
| 9547 H82EK | 20.0 | 18.60 | 8.45 | 10.5 | 3.35 | 3.35 | 0 | | No |
| 9547 H82EN | 17.40x | 23.45 | 8.55 | 6.10 | 20.90 | 13.60 | 8.0 | | Shoulder margins and haft edges ground |
| 9500 H21H | 13.85x | 15.95 | 3.45 | | 9.55 | 9.55 | | 3.10 | Base and edges ground |
| 9640 H195A | 48.25 | 14.20 | 9.00 | 5.5 | 14.2 | 9.85 | 3.85 | | No |
| 9558 H97A | 39.90x | 38.10 | 8.70 | 11.95 | 30.10 | 21.95 | 14.90 | 2.95 | Side notches ground |
| 9578 H120M | 34.65x | 23.85 | 7.10 | 5.20 | 17.10 | 14.0 | 5.65 | | Side notches ground |

bedded within the thin aboriginal midden level encountered just northwest of the cabin foundations along Hale Run (see Fig. 5).

## Aboriginal Ceramics

Previous Whittlesey ceramic typology has been both confusingly inclusive, inconsistent, and imprecise. This point had earlier been made by Murphy (1971b) who provided the first workable descriptions for many of the Whittlesey ceramic types. I have expanded upon and modified several of the type names proposed by Morgan and Ellis (1943), Fitting (1964) and Murphy (1971a, 1971b), in an effort to look for significant changes in ceramics through time and space. While not yet demonstrable that the type varieties proposed will reveal everything we always wanted to ask about the late prehistory of northeast Ohio, it is unfortunately true that previous ceramic seriations based upon the previous ceramic typology have not revealed much at all. For example, the misnamed type Fairport Plain was first loosely defined by Fitting (1964:164) who added the statement that most of these ceramics were cordmarked to the lip, although some were plain. Fitting also noted that both plain and notched lips occurred, and, although he reported that there were variations in the temper of Whittlesey ceramics, he did not use temper in his type definitions (1964:162).

TABLE 11
Split Slate Knives
(in mm)

| Catalogue Location | Maximum Length | Maximum Width | Maximum Thickness | Striae, Grinding, Beveling or Edge Damage Present? |
|---|---|---|---|---|
| 9545 H78A | 45.0 | 16.25 | 9.25 | Yes |
| 9578 H120P | 21.65 | 23.0 | 6.85 | Yes |
| 9578 H120T | 31.0 | 22.75 | 9.55 | None |
| 9622 H176HD | 63.7 | 32.3 | 10.6 | Yes |
| 9615 H167T | 40.75 | 23.20 | 6.25 | None |
| 9525 H98J | 47.65 | 31.0 | 9.25 | None |
| 9511 H26AV | 49.55 | 47.90 | 9.80 | Yes |
| 9509 H214KO | 23.40 | 16.45 | 5.95 | Yes |
| 9615 H167G | 45.9 | 23.2 | 8.8 | Yes |

Based on the ceramics recovered in his 1968 excavation at Fairport Harbor, Murphy (1971a) suggested that there did not appear to be any significance to the distributions of the ca 30% shell-tempered (and mixed shell-and-grit) ceramics at Fairport Harbor in terms of surface finish, or lip mode or decoration, a position supported in his more analytical definition of the type Fairport "Plain" (Murphy 1971b:299–300). The term Fairport Plain, with or without quotation marks, is still incorrectly inclusive. It is my position here (see Brose 1980) that the distinction between plain or smoothed vessel surfaces and cordmarked vessel surfaces, is likely to carry some degree of archaeological information although whether chronological or sociogeographical is yet unknown. Indeed the use of overly inclusive and/or borrowed ceramic terms (e.g., Brose

TABLE 12
Miscellaneous Ground and Polished Stone Artifacts

| *Catalogue Location* | *Description* | *Max. L. (mm)* | *Max. W. (mm)* | *Max. T. (mm)* | *Inside Diameter of Drilled Holes (in mm)* |
|---|---|---|---|---|---|
| 9612 H163AC/ H163AD | 2 portions of 3 hole Slate Gorget | 37.1 29.1 | 29.6 31.9 | 4.4 4.4 | 3.9 (incomplete) 4.6 and 5.4 (broken) |
| 9656 H214KN | Broken 1 hole Gorget of Sandstone | 97.65 | 47.0 | 12.45 | 6.2 |
| 9647 H-204AA | Broken Slate Gorget | 51.2 | 40.4 | 9.10 | — |
| 9595 H-143A/ H143C | Broken clay bead Broken clay bead | 15.85 16.55 | 7.55 7.55 | 6.45 6.65 | 3.5 3.5 |
| 9630 H-184CE | Complete clay bead | 22.9 | 9.0 | 8.0 | 4.1 |
| 9630 H-184X | Broken limestone bead | 12.65 | 7.9 | 7.0 | 3.8 |
| 9645 H-202A | Granodiorite Celt | 110.65 | 72.95 | 32.5 | — |

1973b) is likely to conceal such potential data. The type name Fairport Harbor Plain should be reserved for the plain vessels previously included in the old Fairport Plain of Fitting and the Fairport "Plain" of Murphy. This leaves the type name Fairport Harbor Cordmarked to refer to the cordmarked ceramics previously included by those authors. I have further used the type-variety system as propounded by Phillips (1970) to determine possibly significant varieties within each type, distinguished by the presence (*var.* Painesville) or absence (*var.* Willoughby) of the horizontal row of punctates below the vessel lip. The variable lip notching noted by all authors, from Greenman (1935a, 1935b, 1937) to Murphy (1917b), appears to be a freely varying vessel mode in the sense used by Phillips (1970(1):55). As such it deserves description, but until its significant distribution in time and/or space is demonstrated, need not be given classificatory status.

A resolution for the issue of the ceramic tempering material is less obvious in the late prehistoric ceramics of the Lake Erie region. There seems little justification for cluttering the literature with a plethora of ceramic type and variety names redundant in all save the nature of inclusive tempering agent when there seems to be a free variation along a continuum from wholly grit-tempered through mixed shell-and-grit-tempered, to wholly shell-tempered ceramics which differ in no other attributes (cf. Brose 1973b; Brose et al. 1976). Indeed, shell tempering seems to appear relatively early in the seriation of Whittlesey ceramics (say after about A.D. 1200), at which time its relative frequency may be as high as 20% of some types (Brose 1976b, 1978a, 1980, 1984, 1985a, 1985b). There is not much apparent change in frequencies through time, for the latest dated Whittlesey components also yield about 15% to 20% shell and mixed shell-and-grit tempering. Nonetheless, the high relative frequency of shell tempering for some types at the Fairport Harbor site itself (Murphy 1971b) or at some structures at the South Park site (Brose 1978b, 1985b) suggests that with closely controlled ceramic lots the frequency of shell tempering may represent significant social patterning, if not also being temporally significant (but probably not temporally diagnostic).

Using the former Ohio State Museum collections of Greenman (1935a, 1935b, 1937) and Morgan (1943), Fitting (1964:165ff) developed a seriation from early to late: Fairport Plain to Reeve Opposed-Reeve Horizontal to Tuttle Hill Notched. He concluded that the site sequence was Fairport Harbor, Reeve, South Park, and Tuttle Hill. This sequence, and indeed much of the ceramic seriation, was based on the assumption of single componency for the sites.

Murphy clearly recognized the fact that multiple occupations had occurred at South Park (1972), at Fairport Harbor (1971a), and at Lyman (1971c). Recent investigations (Belovich and Brose 1982; Brose 1973b, 1975, 1976a, 1976b, 1985b; Brose, Wentzel, et al. 1976; Brose, White, and Ford 1983; Bush 1982; Lee 1982) have confirmed Murphy's recognition and added data to support the multi-component nature of the Reeve and Tuttle Hill sites also. Lacking the stratigraphic control revealed by subsequent extensive excavation, Murphy (1972) seriated his South Park ceramics into four typological components. From early to late these were represented by a component characterized by Mixter series and what Murphy called Glen Meyer ceramics (1972:33); a component characterized by Reeve Horizontal, his newly defined Reeve Filleted, and crude Parker Festooned ceramics; a compo-

nent characterized by Reeve Opposed and Horizontal and possibly by his recently defined Fairport Filleted ceramics; and a final component dominated by Tuttle Hill Notched ceramics. Based upon this study, and upon his earlier typological remarks (1971b), I infer that Murphy felt the Whittlesey ceramic seriation might be dichotomized into a Cuyahoga Valley and a somewhat different Lake Shore sequence (but with considerable overlap at times).

Murphy's suggested overall sequence, which seems to have given little significance to the relative frequencies of shell temper (rightly, I believe), began prior to A.D. 1300 with Mixter and Glen Meyer as external ceramic introductions into a local assemblage of Fairport "Plain" and Reeve Horizontal. This was seen as followed by the development of Fairport Filleted and Reeve Opposed ceramic types, possible as a response to the introduction after A.D. 1400 of Parker Festooned from the west and McFate Incised from the east. Reeve Filleted had developed from Fairport Filleted after A.D. 1400, and by A.D. 1600 this had in turn developed into Tuttle Hill Notched, the latest local ceramic type. Murphy recognized that there were morphological varieties in each of these Whittlesey ceramic types and suggested that these might have chronological significance. As he stated, "All such definitions of formal ceramic types are inevitably subjective and are always subject to future refinement. The same is true of inferred relationships and suggested ages of these types" (1971b:298).

Although the decade since his study has indeed provided data for typological refinement, has raised some questions concerning the cultural relationships, and has seen further excavation at stratified sites yielding revisions to his suggested ages, the general sequence Murphy proposed in 1971 has been supported.

Murphy's typology was artificially limited at its earlier end, due to the circumstances that no early Whittlesey sites had been identified. The recent excavations at a number of small early Late Woodland sites in Cuyahoga, Lake, Geauga, and Summit counties (Belovich and Brose 1982; Brose 1975, 1980; Brose and Pratt 1976; Brose and Scarry 1976; Brose, White, and Ford 1983; Bush 1982; Fienga and Lee 1982; Lee 1982) have shown that the earliest Whittlesey ceramics developed from local Woodland antecedents in the period between A.D. 1000 and A.D. 1200, during the Riverview phase, as previously defined by lithic seriation (Brose 1978c).

The Jonathan Hale Farm site lithic materials were a critical component of that Riverview phase, and the aboriginal ceramics form an assemblage which by seriation should also fall in the period between A.D. 1000 and A.D. 1150.

The 1971 and 1980 excavations at the Hale Farm recovered just over five hundred fragments of aboriginal pottery (Tables 13 and 14; Pls. IV and V). The ceramic assemblage from the Hale Farm represents 11 different vessels. Nine of these, grit-tempered cordmarked jars with no plastic modifications, are typical of the general early Late Woodland period in the Great Lakes Region. Two of the vessels have the notched, thickened lip or folded rim strip or collar which occurs both in some regional early Late Woodland ceramic assemblages at about A.D. 1000, and which, in many varieties, seems to have been considered a characteristic of Whittlesey focus ceramics, usually assigned to this period A.D. 1300 to A.D. 1600.

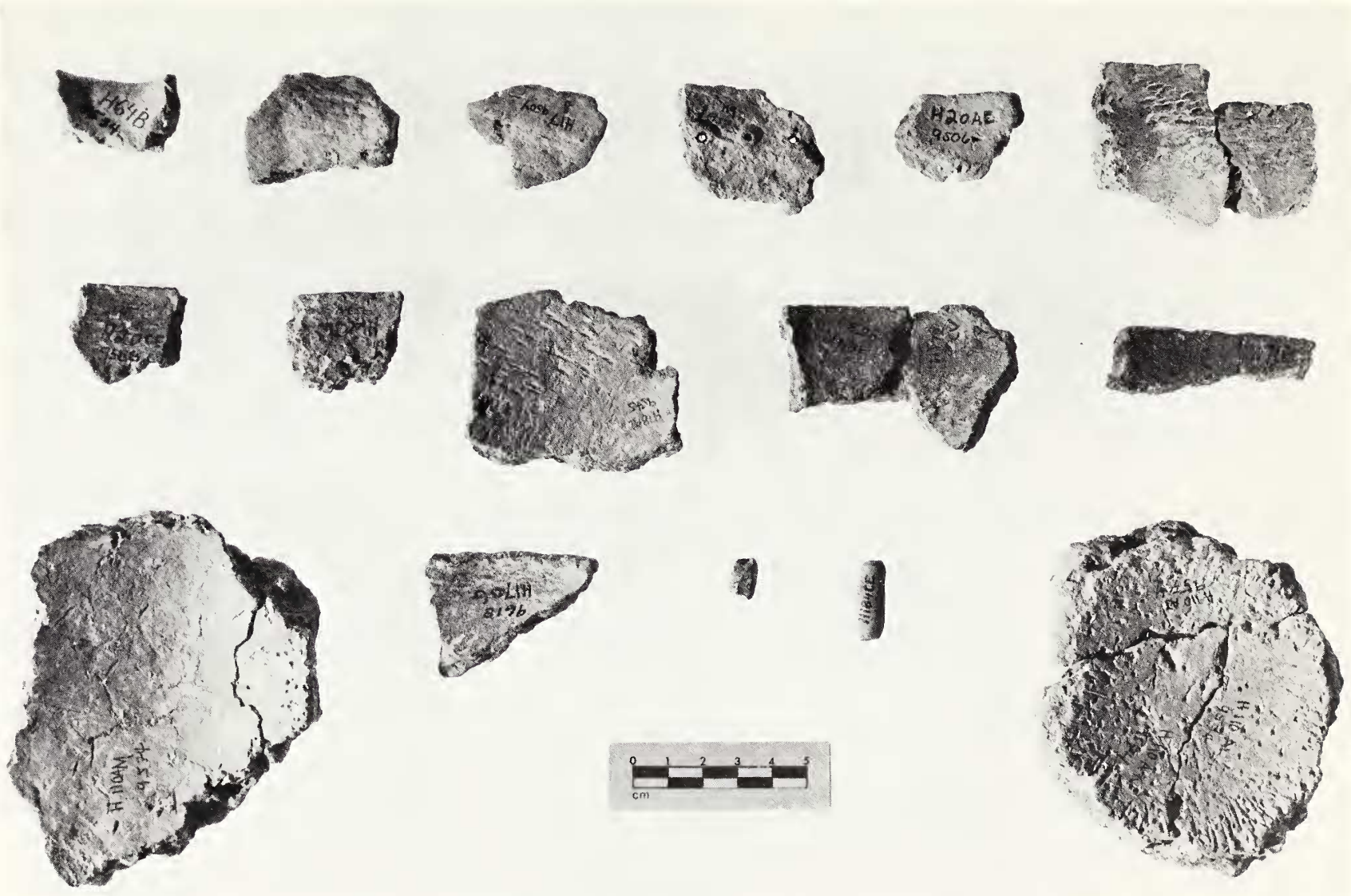
TABLE 13
Distribution of Surface Finish on Prehistoric Ceramics from the Hale Farm Site (Rimsherds/Body sherds)

| *Exterior Surface Treatment* | *Interior Surface Treatment* | | | |
|---|---|---|---|---|
| | *Cordmarked* | *Plain* | *Brushed or Fabric Impressed* | *Total* |
| Cordmarked | 1/6 | 14/446 | 0/0 | 15/452 |
| Plain | 0/0 | 3/0 | 0/0 | 3/0 |
| Brushed or Fabric Impressed | 0/0 | 0/52 | 0/0 | 0/52 |
| Total | 1/6 | 17/498 | 0/0 | 18/504 |

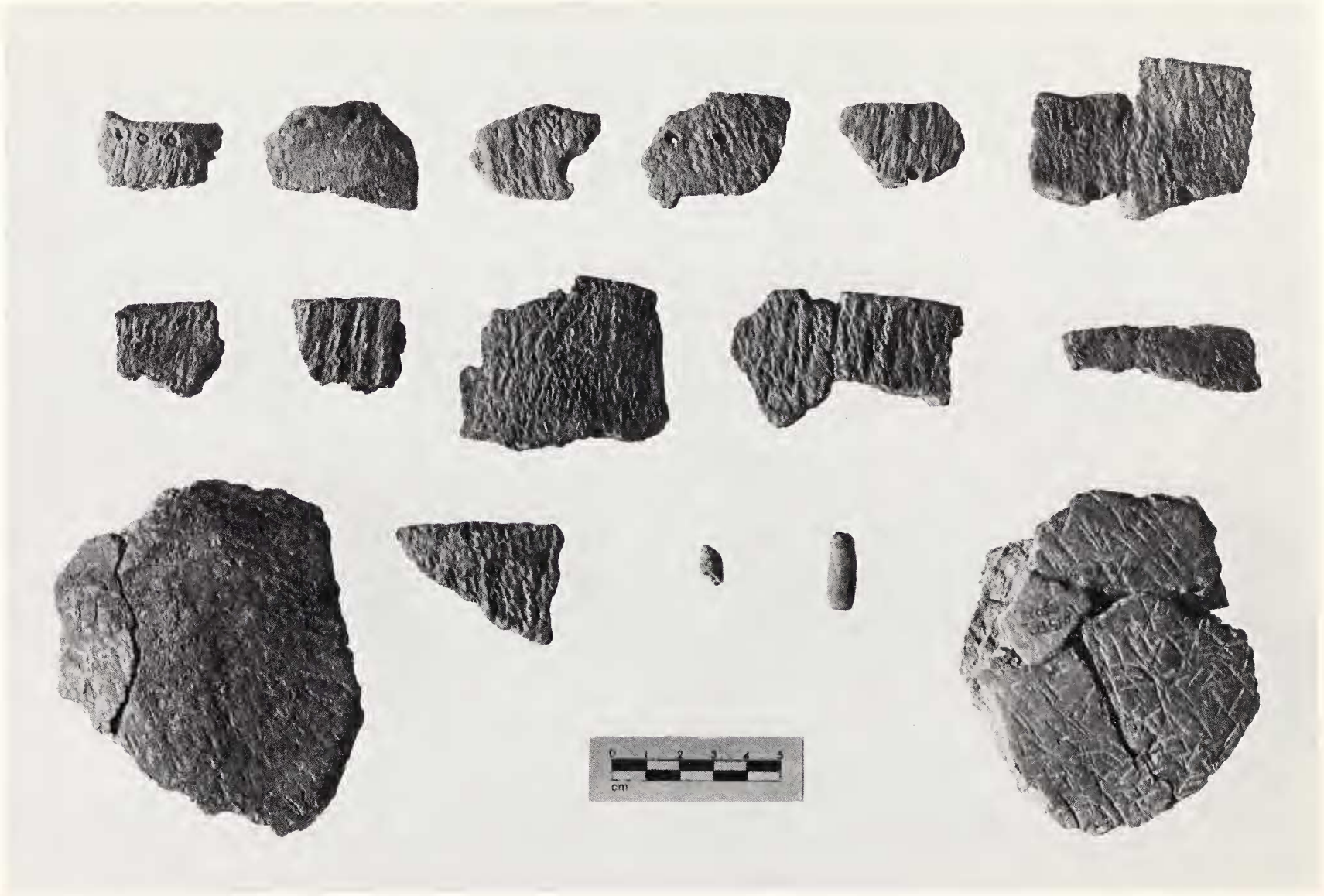
The type Cuyahoga Cordmarked, is represented by five rimsherds, apparently from three different vessels at the Hale Farm site. It was previously defined based on ceramics recovered from two rock-shelters located in Boston Ledges along Richie's Run, about five miles downstream and across the Cuyahoga Valley (Brose and Scarry 1976:134–136). All Cuyahoga Cordmarked ceramics represent small somewhat outcurved rim, semiconoidal to subglobular jars with massive grit tempering. Flat, slightly thickened lips show a slight exterior bevel and are about 9. 6 mm thick and the rims below the lip are from 8.2 to 12. 6 mm ($\bar{x}$ = 9.6 mm) in thickness. Vessel exterior

TABLE 14
Summary Statistics for Thickness of Prehistoric Ceramics from the Hale Farm Site (in mm)

| *Vessel Portion* | *Sample Size* | *Mean* | *S.D.* | *C.V.* |
|---|---|---|---|---|
| A. Lip | 18 | 6.072 | 1.044 | 0.172 |
| Neck | 17 | 7.458 | 1.054 | 0.141 |
| Shoulder | 16 | 8.425 | 1.764 | 0.209 |
| Body | 195 | 10.704 | 8.995 | 0.840 |
| B. Body Sherd with brushed or Fabric Impressed Exterior and/or uniform curvature | 45 | 12.691 | 2.482 | 0.196 |
| Other Body Sherds | 150 | 9.167 | 3.556 | 0.388 |




Pl. IV. Aboriginal ceramics from the Hale Farm site; exterior surfaces.




Pl. V. Aboriginal ceramics from the Hale Farm site; interior surfaces.

surfaces are decorated with vertical to slightly oblique overlapping impressions of a paddle tightly wrapped with a two ply z, z, S cord. Vessel interiors show direct or slightly dragged z, z, S cordwrapped paddle edge or stick in a zone from the lip to a depth of about 40 mm (Brose and Scarry 1976:134–136).

From the Hale Farm site one Cuyahoga Cordmarked vessel with no additional decoration clearly corresponds to that type description and is here assigned the name Cuyahoga Cordmarked *var.* Boston Ledges. While identical in most attributes to the previous type description its unmodified lip is slightly thinner in thickness ($\bar{x}$ = 7.8 mm), lying at the lower limit of the type distribution. Two additional Cuyahoga Cordmarked vessels from the Hale Farm site are also represented by unmodified lip modes but display the single horizontal row of circular punctuations about 25 mm below the lip. These vessels of Cuyahoga Cordmarked *var.* Hale also have a somewhat thinner ($\bar{x}$ = 6.8 mm), as well as a somewhat more outcurved, neck area. In these attributes they differ from the typical Cuyahoga Cordmarked type in the direction of the Fairport Harbor Cordmarked type and seem to represent a typological and temporal intermediate ceramic variety.

Fairport Harbor Cordmarked is represented by one vessel each of *var.* Painesville, plain lip mode, and *var.* Painesville, notched lip mode; by three vessels of *var.* Willoughby, plain lip mode; and by one *var.* Willoughby, notched lip mode vessel. For all six of these Fairport Harbor Cordmarked vessels, the ceramic paste is contorted and no coil breaks are evident. Temper consists of crushed granitic grit with some apparent selection for lighter, acidic angular minerals such as quartz and plagioclase. Temper particle size ranges from 0.8 mm to 1.8 mm with a mean of about 1.2 mm. Temper density is relatively high, possibly representing between 20 and 30% by volume. Thickness at the flattened lip ranges from 5.1 mm to 6.6 mm with a mean thickness of 6.2 mm. Just below the slightly extruded lip, the neck ranges from 6.1 mm to 8.3 mm in thickness with a mean of 6.8 mm for these vessels with their minimally thinned, minimally outturned rim profiles (Fig. 7). While rim diameters could not be determined from these small sherds, similar ceramics from the

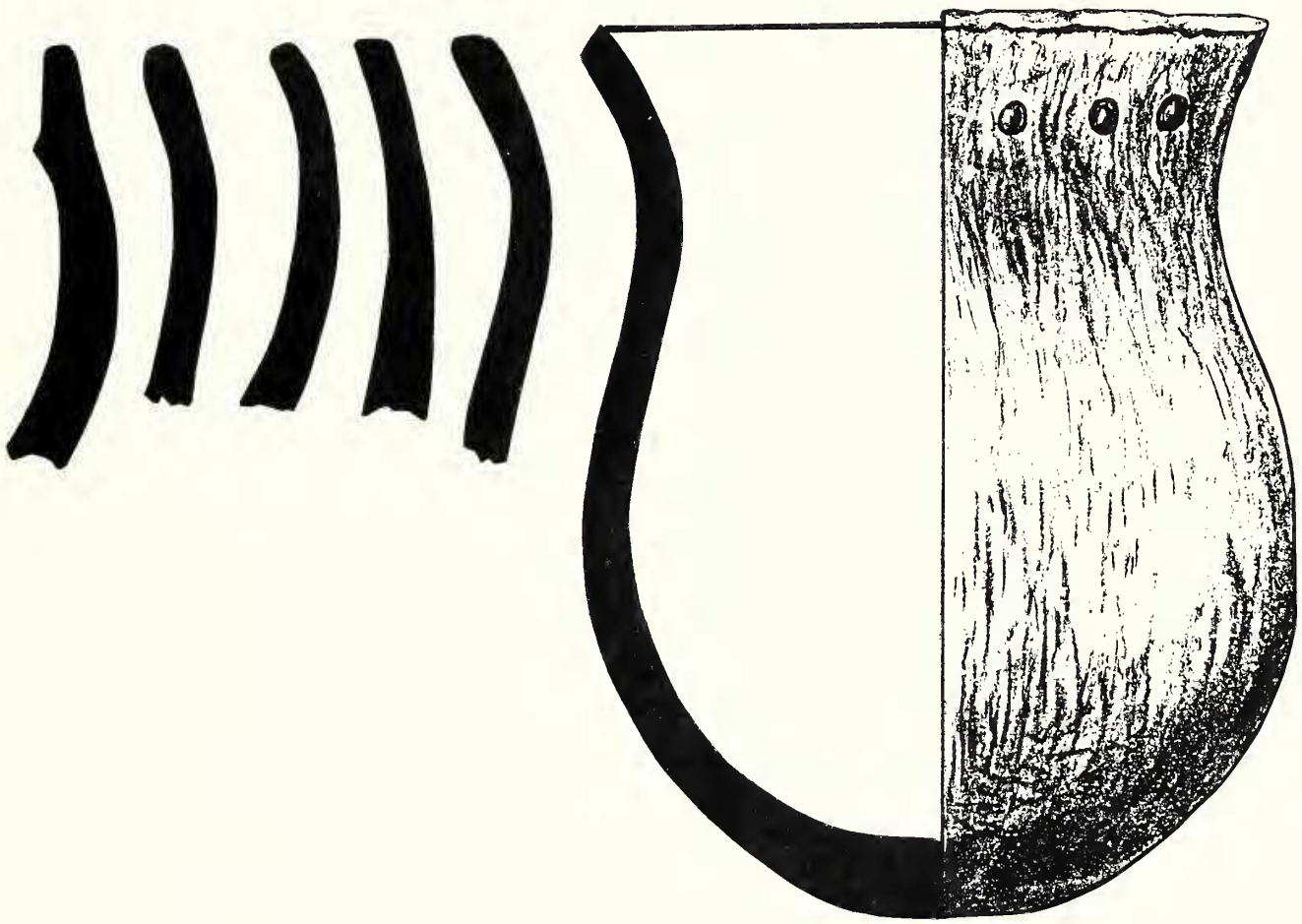


Fig. 7. Rim profiles of aboriginal ceramics from the Hale Farm site (interior to right), with reconstruction of small vessel of the type Fairport Harbor Cordmarked, *var.* Painesville.

earlier Fairport Harbor site collections of Morgan, Ellis, and Murphy range from just under 24 em to over 55 cm.

All exterior vessel surfaces have been malleated from base to lip with a rather coarse, loosely cordwrapped paddle. Ceramic cord impressions are predominantly vertical in orientation. They appear almost entirely to be representative of s, s, Z twisted two-ply cords, although a variety of different sized elements are present on the different vessels. All vessel interiors are smoothed, and often shallow horizontal finger impressions of the potter can be felt.

The three vessels of Fairport Harbor Cordmarked *var.* Painesville are decorated by a single horizontal row of circular or annular punctates around the upper neck. These punctates range from 3 to 7 mm in diameter, are from 8 to 15 mm apart, and from 14 to 40 mm below the lip. Occasionally the punctates were deep enough to create interior bossing and, rarely, they completely penetrated the inner wall (although the lack of regularity for this attribute on single rimsherds suggests that this was a production mistake rather than a deliberate style). One of the Fairport Harbor Cordmarked *var.* Painesville vessels has a series of exterior shallow lip edge notches made by the transverse impression of a rounded tool, and one *var.* Painesville vessel has a plain lip mode. The Fairport Harbor Cordmarked *var.* Willoughby vessels, without a row of punctations, are also represented by one vessel with a plain lip mode and with two vessels having the notched lip mode.

One grit-tempered vessel of the type Fairport Filletted (Murphy 1971b:299) is represented by two rimsherds from the Hale Farm site. The folded rim (sometimes called a thickened lip or collar) is weakly developed, extending downward from the exterior lip for about 8.5 mm and being only about 3.8 mm thicker than the flattened lip of 6.5 mm. The thickest portion of the exterior folded rim is transversely notched with narrow, fingernail-like impressions. The lip itself has a single shallow longitudinal grove incised along its center. Apart from this unusual lip mode the vessel appears similar to ceramics Murphy recovered for the Cleveland Museum of Natural History in 1968 which he felt (correctly, I believe) were intermediate between Fairport "Plain" and Fairport Filleted (Murphy 1971b:299). I have previously proposed two varieties of the type Fairport Filleted, distinguished by the presence (*var.* Hillside) or absence (*var.* Fairport) of vertical finger trailing below the rimfold to the shoulder (Brose 1980, 1984). The Fairport Filleted vessel from the Hale Farm could thus be considered *var.* Fairport with an incised rim mode. I am not comfortable with this pigeonhole, but only the recovery of further examples of such ceramics in significant context would justify the establishment of a new variety.

The final aboriginal vessel from the Hale Farm site is represented by one grit-tempered, smoothed or plain surface rimsherd with a flat notched lip and a single horizontal row of circular punctates. This is similar to many of the plain ceramics with the notched lip mode which had been previously subsumed within the type Fairport Plain (Fitting 1964) or Fairport "Plain" (Murphy 1971a, 1971b). To follow the terminological treatment for the cordmarked majority of those ceramics, this plain vessel should be called Fairport Harbor plain, *var.* Painesville.

These aboriginal ceramics can all be considered as a single prehistoric cultural assemblage, assignable to between A.D. 900 and A.D. 1200. They thus represent the ceramic complex transitional from the still poorly understood early Late Woodland period to the later prehistoric Whittlesey focus, or tradition (Brose 1973b, 1976a, 1976b, 1978a, 1980; Fitting 1964; Greenman 1937; Griffin 1946, 1967; Murphy 1971b). The earlier post-Hopewell societies show widespread ceramic similarity throughout the Midwest. The later Whittlesey tradition represents a geographically localized complex, similar in many ways to those protohistoric Iroquoian and Algonkian groups encountered by the European explorers. The period during which the prehistoric occupation of the Hale Farm occurred is thus of considerable importance in understanding the cultural changes associated with the development of tribal agricultural societies in North America.

The few archaeological sites known prior to A.D. 750, in northeast Ohio show little evidence for any significant differences in the size or composition of the groups which occupied them, although these sites clearly seem to be seasonally and functionally different. None are clearly agricultural villages although corn and squash are present at several.

During the past several years a number of early Late Woodland archaeological sites quite similar to the Hale Farm site have been excavated or reported upon. These now permit some understanding of the period between A.D. 800 and A.D. 1300 in northeastern Ohio.

At the Columbia Road site atop a steep ridge overlooking the Cuyahoga River Valley, test units uncovered four cultural features, two of which were fire pits (Belovich and Brose 1982). Most projectile points were notched but a few were triangular. The plain or cordmarked grit-tempered ceramics had straight or slightly excurvate rims with flat lips, some slightly rounded. Over half of the rims displayed interior cordmarking. Exterior rim decoration consisted of a single nail-punctate sherd. Two radiocarbon dates were A.D. 1040 ± 80 (DIC #2605), and A.D. 970 + 60 (DIC #2606). Our analyses suggest the site was a family campsite utilized during the summer.

The Bass Lake site (Fienga and Lee 1982) appears to be a rather large plant-eollecting and fishing camp located on the north shore of Bass Lake, headwaters of the Chagrin River. Excavation revealed 26 oblong, basin-shaped pits, and single radiocarbon date (DIC #2457) of A.D. 1200 ± 45 was obtained from charcoal.

The projectile points in situ include a few Corner Notched and Levanna types, as well as numerous points intermediate between Levanna and Madison. The ceramics are grit-tempered, with cordmarked exteriors and plain interiors. Rims are everted, or slightly incurving, and may have a folded incipient collar. Vessel bodies are rounded. Decoration, restricted to the exterior neck and rim, to the lower edge of the collar, and to the lips of the vessels, includes incising, punctates, and cordwrapped cord impressions, broadly comparable to Wayne (Halsey 1968) or to Allegan and Spring Creek wares between A.D. 800 and A.D. 1350 in Michigan (Brashler 1981); to the A.D. 900 to 1200 Clemson's Island complex of Pennsylvania; or to the Carpenters Brook phase of New York (Ritchie 1969).

At the Kernisky village site, on the lower Chagrin River, recent excavations (Bush 1982) have revealed what appears to be a floodplain terrace horticultural village with the remains of several structures. The ceramics are cordmarked on the exterior only. They are grit-tempered or grit-and-shell-tempered, with slightly everted rims and flat, slightly rounded lips, most of which are notched. A few ceramic vessels from the earlier Cleveland Museum of Natural History testing in 1971 and 1979 show a folded incipient collar. All of the recovered projectile points could be considered examples of the Madison point type. Although neither the completed analyses nor the absolute dating are yet available, in my judgement the lithic reduction and ceramic tradition seen at the Kernisky village should place the major occupation late in the Fairport phase, dated somewhere between A.D. 1150 and A.D. 1350 (Brose 1978c:90–91).

In 1974, as part of an archaeological survey program for the Cleveland Sewer Distriet, excavations tested and completely exposed a small prehistoric campsite about 25 km to the north of Hale Farm. A remarkably similar assemblage of stone tools and ceramics was encountered in the refuse-filled hearths and postholes of two circular to oval single post structures on the second terrace of the Cuyahoga River (Brose and Pratt 1976:3–8). While no animal bone was preserved at that site, a charred cob of eight-row maize was recovered. With no organie remains appropriate for direct dating, I speculated that the site was occupied between A.D. 900 and A.D. 1300 based on the styles of its projectile points and ceramics. It also seemed related to an early occupation on the high bluffs to the west where still earlier test excavations had revealed an overlying large late prehistoric village on Tuttle Hill (Greenman 1937). When Tuttle Hill was itself destroyed by the construction of the I-77/I-480 interchange, salvage excavation recovered a single burial associated with grit-tempered, exterior and occasionally interior cordmarked, notched-lip ceramics typical of that early Late Woodland campsite. These were dated to A.D. 1048 ± 100 (CWRU-14).

While no direct dates are available, the artifacts, features, and possible structures encountered in testing the Drivers site on the lower Tinker's Creek floodplain, are also nearly identical to those from Hale Farm (Lee 1982).

Beyond those relatively thoroughly explored sites within the region, similar ceramic and lithic artifacts have been encountered in test excavations. In the river valleys, the Kurtz and the Lee village sites, the Rhodes Farm site, and the Young sites are relatively large agricultural sites located on the second terraces of the Cuyahoga, Chagrin, and Grand rivers. Along the smaller tributaries of these rivers, well into the uplands, the Mohawk Park Shelter, the Pineway Trails site, the Gillie (Bernhardt 1973), the Krill (Prufer, personal communication 1983), the Stow and Little Mountain Shelters, the Cleveland Zoo, and the Doan Brook sites are all very small reoecupied fall and winter hunting camps. It is likely that the sporadic recovery of similar artifacts underlying some early nineteenth-century activities on the Cuyahoga River floodplain (cf. Jeff Richner, personal communication 1984; Lee et al. 1983) represent small, even more seasonally limited, single family activities. These sites were possibly occupied for collecting tubers and greens during the early spring, usually called "the starving moon" by Indians throughout this area.

There are also a few contemporary sites of differing sizes such as the Avon Plant site (Brose and Morse 1976), the Cahoon Creek and the Greenhouse sites (Brose, White, and Ford 1983), a lower component of the Reeve site, dated at A.D. 1065 ± 100 (CRWU-13) (Brose 1985a), and the Ashtabula Gulf site reported by Kraus (1942). These sites all sit on sand ridges cut by streams as they enter Lake Erie. They were reoccupied as medium-sized agricultural villages and as seasonal fishing camps.

By combining evidence from these sites it is possible to glimpse new economic and geographic patterns which were adopted by the Indians of this early Hale phase of northeast Ohio's Whittlesey cultural tradition between A.D. 900 and A.D. 1200. This was a period of significant climatic change, beginning with winters which were both colder and drier than normal and with mild summers which were longer and wetter. By the end of this phase, winters had become rather mild and quite wet while, except for a narrow zone along Lake Erie from just west of Cleveland to Pennsylvania, summers were not only long and warmer, but also drier (cf. Barreis et al. 1976; Brose 1980; Wendland and Bryson 1974). Such summertime changes would have made the social commitment to floodplain corn agriculture easier, and the shorter milder winters with heavier snow cover would have made late winter hunting and early spring fishing and plant collecting increasingly reliable.

## Conclusion

It must have been some late summer day nearly a thousand years ago that the Hale Farm site, surrounded by forests, was first cleared and occupied. The prehistoric group appears to have included a dozen or so American Indians. Probably there were two or three related families. Where these people spent that spring and early summer is not known. Possibly they had come from one of those archaeological sites known along the Cuyahoga River terraces in nearby portions of the valley. Those sites had been occupied by somewhat larger groups whose pottery and stone tools suggest close relationships with those found at the Hale Farm site. (Brose 1975; Brose et al. 1981) Those sites also yielded some cultivated maize and show evidence of animals taken in the late spring or early summer, including large numbers of fish and migratory waterfowl.

One or two semicircular to circular prehistoric structures were built at the Hale Farm site. Both were likely to have had a covering of bark or reed mats tied over a simple ring of saplings placed into the ground and tied together at the top. It is unknown whether any interior bracings were used, although some of the historic Indians of the Great Lakes who constructed similar houses did use them (cf. Brose 1970:37–38).

While spending that summer at the Hale Farm site, these Indians gathered the ripening wild fruits and nuts and hunted a variety of animals as they waited to harvest their small crops of corn from the sandy floodplain terraces to the east and north. A wide variety of domestic activities were performed, only some of which have left archaeologically recovered remains. Chipped stone tools were made from cobbles picked up in the nearby Cuyahoga River and from stone obtained on expeditions to quarries and outcrops which were several day's travel from the Hale Farm site. The stone tools were used for a range of cutting, scrapping, and piereing work. They were also broken and resharpened, and some were lost.

Pottery was also made at the site, from the local clays mixed with fragments of crushed and burned rock. It was a simple shape, hand built in several different sizes to accord with the group's functional needs for both cooking and for storage. A good deal of it was fragile and several of the vessels were broken.

With the coming of cooler fall weather after the harvest, the natural resources which had sustained the group for several months were less easily obtained. The fires would have been put out and the remains of the last meals, along with the broken and discarded bowls and jars, were thrown into the pits and hearths. The bark or skin mattings would be taken from the sapling framework of the houses. Dried nuts and corn and the remaining smoked meat could be packed along with a few personal possessions, and each family would leave the valley for their winter hunting camps in the upland. They probably planned to meet again the following summer, but they never returned to the Hale Farm site itself. The sapling framework of the houses decayed in place. Through centuries falling leaves and the spring floods from Hale Run filled in and eventually covered completely the abandoned fire hearths and half-emptied storage pits. The low rise at the forks of Hale Run was reclaimed by the silence and the forests, until these, in turn, were disturbed by Abraham Miller's axe.

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